

Mathematics

By a group of supervisors

PARENTS' GUIDE

Interactive E-learning Application





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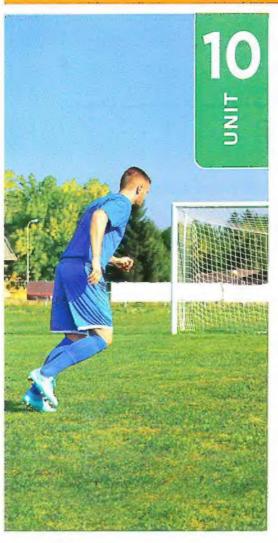


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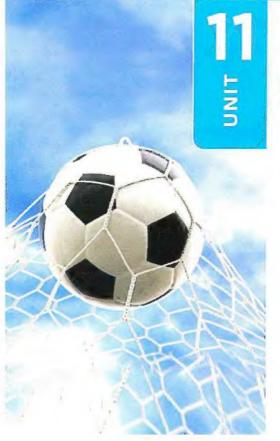
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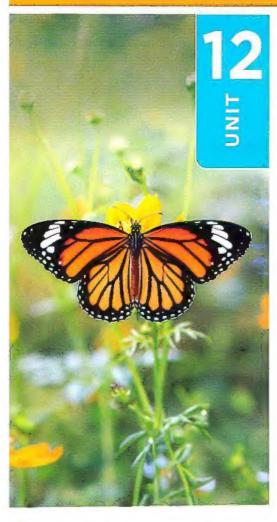
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Fractions ____

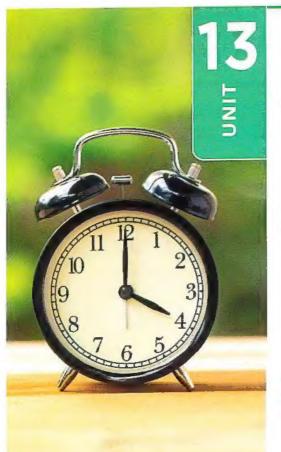
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THEME THREE

Fractions, Decimals, and Proportional Relationships

TIND O

Fractions

- ▶ Concept 1: Composing and Decomposing Fractions
- ▶ Concept 2 : Comparing Fractions
- ➤ Concept 3 : Multiplication and Fractions

Did you know ?!

Newborn babies spend $\frac{2}{3}$ of a day sleeping. School-age children sleep for $\frac{5}{12}$ of a day. Adults sleep for $\frac{1}{4}$ of a day. Which age group spends the least time sleeping? Which spends the greatest time?



Concept

Composing and Decomposing Fractions



Lesson No.	Lesson Name	Learning Objectives				
Lessons 1 to 3	Unit Fractions	 Students will define unit fractions. Students will identify unit fractions. Students will compose other fractions with unit fractions. 				
	Decomposing Fractions	Students will decompose fractions into unit fractions.				
	More of Decomposing Fractions	 Students will represent fractions with repeated addition and subtraction of unit and other fractions. 				
Lesson 4	Fractions and Mixed Numbers	 Students will define mixed numbers. Students will define improper fractions. Students will explain how mixed numbers and improper fractions relate to unit fractions. 				
Lessons	Adding and Subtracting Fractions	Students will add and subtract fractions and whole numbers.				
5 to 7	Adding Mixed Numbers	Students will add mixed numbers with like denominators.				
	Subtracting Mixed Numbers	Students will subtract mixed numbers with like denominators.				

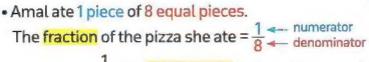
Lessons 1 to 3



- Unit Fractions
- Decomposing Fractions
- More of Decomposing Fractions

Remember Unit fractions and proper fractions

Amal cut a pizza into 8 equal pieces. She ate 1 piece. Bassem ate 3 pieces. What fraction of the pizza did each one of them eat?



 $\frac{1}{\Omega}$ is a unit fraction, it is read as one eighth.

 Bassem ate 3 pieces of 8 equal pieces. The fraction of the pizza he ate = $\frac{3}{9}$ $\frac{3}{8}$ is a proper fraction, it is read as three eighths.

Reviewing Vocabulary

Here are some math vocabulary words that you should know.

Fraction	a number that names a part of a whole or a part of a group.			
Denominator	the number below the bar in a fraction that tells how many equal parts there are.			
Numerator	the number above the bar in			

a fraction that tells how many equal parts have been counted.

Unit fraction a fraction has a numerator of 1.

Proper fraction a fraction its numerator is less than its denominator.



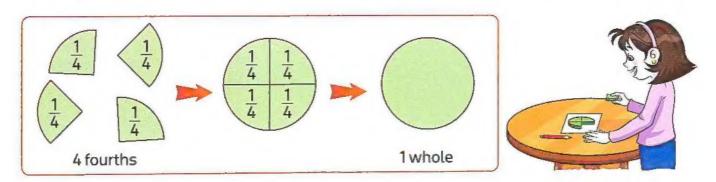
Note The unit fractions are also proper fractions.

Notes for parents:

 Ask your child to give you an example for unit fraction and another example for proper fraction.

Learn 1 Compose fractions

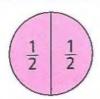
• You can put fractions together to compose (build) a new fraction or one whole.



When you put 4 fourths together, you will get 1 whole.

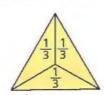
4 fourths =
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 1$$
 whole

You can use unit fractions to compose one whole



2 halves = 1 whole

$$\frac{1}{2} + \frac{1}{2} = 1$$



3 thirds = 1 whole

$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$$

$$\begin{array}{c|c} \frac{1}{4} & \frac{1}{4} \\ \hline \frac{1}{4} & \frac{1}{4} \end{array}$$

4 fourths = 1 whole

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 1$$

Also, you can use unit fractions to compose proper fraction



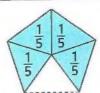
The colored parts = $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$

Read: Three fourths



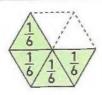
The colored parts = $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{5}{8}$

Read: Five eighths



The colored parts = $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{4}{5}$ The colored parts = $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{4}{6}$

Read: Four fifths



Read: Four sixths

Encourage your child to build models to show one whole using unit fractions.

Learn 2 Decompose fractions

- Decomposing a fraction means breaking it into separate units or parts.
- You can decompose one whole into unit fractions as the opposite chart.

$$1 = \frac{1}{2} + \frac{1}{2}$$

$$= \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$$

$$= \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

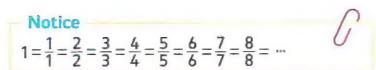
$$= \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$= \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

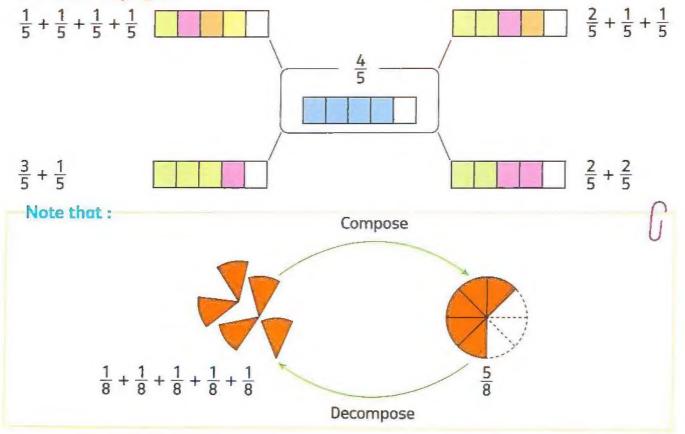
$$= \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$$

$$= \frac{1}{8} + \frac{1}{8} = \cdots$$

		-		1		-4			
		<u>1</u> 2					-	1 2	
	1/3			1	}			1 3	ī
1 4			1/4			1 4			1/4
1 5		1 5	1 1 5 5 5		1 5		1 5		
1/6		6	1/6		1/6		1	1 5	1/6
15 16 17 18	17		1 7	1 7		17		17	1/4 1/5 1/6 1/7
1 8	1 8	18	3	1 3	18		1 B	1/7 1/8	1 8



 You can use unit fractions or proper fractions to decompose a fraction as in the following figure.



Help your child to use rectangles or circles to build a fraction using unit fractions.

Example 1

Create a model to represent each of the following:

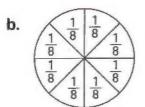
- **a.** One whole $=\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$
- **b.** One whole $=\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

You can use rectangles or circles

Solution [V]



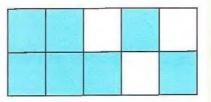




Example 2

What is the fraction that represents the colored parts?

Write an equation using the unit fractions to show this fraction.



Solution 🕎



$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{7}{10}$$

Example 3 -

Decompose each of the following fractions in two ways. Draw a model.

a.
$$\frac{4}{5}$$

b.
$$\frac{5}{8}$$

Solution [8]

	First way	Another way
a.		
	$\frac{4}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$	$\frac{4}{5} = \frac{2}{5} + \frac{2}{5}$
b.		
	$\frac{5}{8} = \frac{2}{8} + \frac{3}{8}$	$\frac{5}{8} = \frac{1}{8} + \frac{1}{8} + \frac{3}{8}$

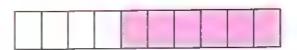
- Try to find another ways to decompose fractions.
- Help your child to decompose fractions in several ways.

Example 4

Complete.

a. The numerator of the fraction $\frac{5}{9}$ is





c. $\frac{1}{7} = 1$

d.
$$\frac{3}{8} = \frac{1}{8} + \frac{1}{8}$$

d.
$$\frac{3}{8} = \frac{1}{8} + \frac{1}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac$$

f. The number of sixths in one whole =

Solution [V]



- a. 5
- **b**. $\frac{6}{10}$
- c. 7
- d. 2
- f. 6

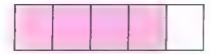


Villian your understanding

1. Write the fraction that represents $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ Draw a model for this fraction.

Work area

2. Use unit fractions, to write an equation represents the fraction for the colored parts.



- 3. Write an equation to decompose $\frac{3}{4}$ into unit fractions.
- 4. Decompose the following fraction in two ways.

$$\frac{3}{6} = \boxed{} + \boxed{} + \boxed{}$$

Encourage your child to use models or drawings to compose and decompose fractions in this page.

Exercise on lessons 1 to 3

- Unit Fractions
- Decomposing Fractions
- ► More of Decomposing Fractions
- REMEMBER UNDERSTAND
- 3.4
- 🚓 PROBLEM SOLVING
- Tram the school book

1. (ii) Fill in the table with information about each fraction.

	Total number of equal parts	Total number of equal parts shaded	Word form	Fraction form
a. ()				
b. (
c.				
d.				
e. (
f.				

- 2. Record a definition of each term.
 - a. Fraction:
 - b. 🔙 Numerator:
 - c 🚍 Denominator:
 - d. I Unit fraction:
 - e. Properfraction:

3. Create a model to represent each of the following. Use circles or rectangles.

a.
$$\frac{1}{2} + \frac{1}{2} = 1$$
 whole

b.
$$\square \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$$
 whole

c.
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 1$$
 whole

4. How many unit fractions compose each of the following fractions?

- - e. Three quarters
- f. Seven tenths

5. What is the fraction that represents the colored parts?

Write an equation using unit fractions to show how to compose this fraction.

a. 🗐



d. I Five eighths

b.







e.



f.



6. Complete the table.

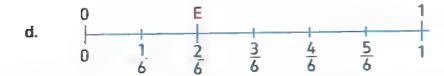
Model	Fraction	Unit fraction	Equation to form the fraction
a			
b.	56		
c.	_	18	
d.			$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

7. Look at point E on the number line. How many unit fractions do you need to represent point E in each of the following?









8. Write an equation to decompose each of the following into unit fractions.

a.





C.



d.



9. Write an equation decomposing each of the following fractions into unit fractions.

a.
$$\frac{3}{5} =$$

a.
$$\frac{1}{5}$$

d.
$$\frac{3}{8} =$$

b.
$$\frac{5}{7} =$$

e.
$$\frac{2}{6} =$$

c.
$$\frac{4}{5}$$
 =

b.
$$\frac{5}{7} =$$
c. $\frac{4}{5} =$
e. $\frac{2}{6} =$
f. $\frac{7}{11} =$

[Cairo 23]

10. Decompose each of the following proper fractions in two ways.

a. $\frac{3}{5}$

$$\frac{3}{5} = \frac{1}{1} + \frac{1}{1}$$

First way

- **b.** $\frac{7}{8}$
- $\frac{7}{8} = \bigcirc + \bigcirc$
- c. $\frac{5}{6}$
- 5=----
- d. $\frac{4}{9}$
- 49=
- e. $\frac{4}{7}$
- 47=

Another way

$$\frac{3}{5} = \frac{\bigcirc}{\bigcirc} + \frac{\bigcirc}{\bigcirc} + \frac{\bigcirc}{\bigcirc}$$

$$\frac{7}{8} = \bigcirc + \bigcirc + \bigcirc$$

$$\frac{4}{9} =$$

- 11. In Draw models and write as many equations as you can to decompose the given fractions.
 - a. 9
 - 15

- **b**. $\frac{12}{15}$
- d. 18
- 12. Write the fraction that represents each model, then write as many equations as possible to decompose each model.
 - a.



b.



C.



d.



- 13. Complete.
 - a. The fraction which represents the opposite figure =



[El-Menia 23]

b. The shaded parts = -



c. The number of unit fractions in $\frac{8}{9}$ is -

[Souhag 23]

d. One whole =

fourths

e.
$$\frac{1}{3} + \frac{1}{3} =$$

g.

$$=\frac{1}{9}+\frac{1}{9}+\frac{1}{9}+\frac{1}{9}+\frac{1}{9}$$

$$= \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$$

i.
$$\frac{8}{8}$$
 =

$$k. \frac{9}{} = 1$$

[Cairo 23]

$$-\frac{1}{7}+$$

f. $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$

m.

$$+\frac{1}{5}=\frac{4}{5}$$

o. Three sevenths = ---+---+

- 14. Two families went to the local restaurant. Each family ordered the feteer meshaltet. Eman's family wanted their feteer cut into 6 equal pieces. Ayman's family wanted their feteer cut into 8 equal pieces. If both feteer are the same size, which family will have larger pieces to eat? How do you know?
- 15. Mazen needed $\frac{3}{4}$ cup of sugar for his recipe. He had a measuring cup that held $\frac{1}{4}$ cup of sugar. How many times will he need to fill the measuring cup for his recipe?
- 16. Omar ate $\frac{1}{5}$ of a bag of popcorn. He and his brother Amir shared the rest of the bag. Write equations to show two ways they could share the remaining popcorn.
- 17. Samira cut a cake into 8 equal parts and ate one part of them. What is the fraction that represents the remaining parts?

 (Cairo-El Sayda Zainab 22)

Choose the correct answer.

1. The numerator of the fraction $\frac{5}{9}$ is

[El-Monofia 23]

A. 9

B. 4

C. 5

D. 14

2. The model which represents $\frac{2}{5}$ is —



- 8.
- C.
- D.

3. Five eights =

(Cairo-Rod El Farag 23)

- A. $\frac{5}{8}$ B. $\frac{5}{13}$ C. $\frac{8}{5}$ D. $\frac{8}{13}$
- 4. Which of the following represents a unit

fraction?

(El-Menia 23, El-Monofia 23)

- A. $\frac{7}{4}$ B. $\frac{7}{7}$ C. $\frac{4}{7}$ D. $\frac{1}{7}$

5. $\frac{5}{}$ = 1

[Giza 23]

A. 2

B. 3

C. 5

D. 10

- 6. Which of the following expression is
 - equal to $\frac{7}{9}$?

[Alex. 23]

- A. $\frac{1}{3} + \frac{1}{3} + \frac{5}{3}$ B. $\frac{2}{4} + \frac{5}{5}$
- C. $\frac{1}{9} + \frac{2}{9} + \frac{2}{9}$ D. $\frac{4}{9} + \frac{3}{9}$

- $\frac{3}{7}$ + $\frac{3}{7}$ = $\frac{6}{7}$

- A. $\frac{1}{7}$ B. $\frac{2}{7}$ C. $\frac{3}{7}$ D. $\frac{4}{7}$
- 9. $\frac{3}{7} = \frac{1}{7} + \frac{1}{7} +$ [El-Monofia 23]
 - A. $\frac{1}{7}$ B. $\frac{1}{5}$ C. $\frac{5}{7}$ D. $\frac{7}{7}$

8. 🖾 Which of the following expressions is the same as $\frac{5}{6}$? [Cairo-Middle of Cairo 22]

A.
$$\frac{1}{6} + \frac{2}{6} + \frac{3}{6} + \frac{4}{6} + \frac{5}{6}$$

- B. $\frac{5}{4} + \frac{5}{4} + \frac{5}{4} + \frac{5}{4} + \frac{5}{4}$
- C. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
- D. $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$
- **10.** Which equation is NOT a correct decomposition of $\frac{10}{11}$?

[Qena 22]

- A. $\frac{1}{11} + \frac{2}{11} + \frac{3}{11} + \frac{4}{11} = \frac{10}{11}$
- C. $\frac{1}{11} + \frac{2}{11} + \frac{8}{11} = \frac{10}{11}$

- **B.** $\frac{5}{11} + \frac{5}{11} = \frac{10}{11}$
- D. $\frac{1}{11} + \frac{2}{11} + \frac{2}{11} + \frac{2}{11} + \frac{3}{11} = \frac{10}{11}$
- The number of unit fractions which represent the point E is
 - A. 2

B. 4

C. 6

D. 8



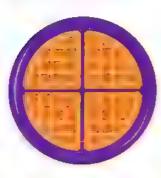
Fractions and Mired Numbers

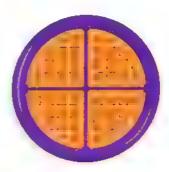
Learn

Improper fractions and mixed numbers

There are two whole waffles and one fourth of a waffle. There are nine fourths of waffles.

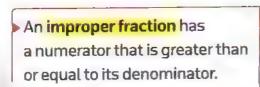




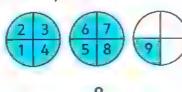




You can write the amount of waffles as an improper fraction or as a mixed number.



To write an improper fraction, count the parts.



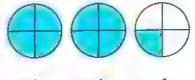
9 4

 $\frac{9}{4}$ means: you have 9 parts, each part is a fourth $\begin{bmatrix} 1 \\ 4 \end{bmatrix}$ of a whole.

A mixed number is made up of a whole number and a proper fraction.

Whole number
$$\longrightarrow 2\frac{1}{4}$$
 Proper fraction

To write a mixed number, count the wholes and parts.



 $\frac{4}{4} + \frac{4}{4} + \frac{1}{4} = 2\frac{1}{4}$

 $2\frac{1}{4}$ read as "Two and one fourth".

Notes for parents:

 In this lesson, your child will write and make connection between mixed numbers and improper fractions.

Remember The definitions of the three types of fractions

Proper fraction

A proper fraction is just a fraction where its numerator is less than its denominator.

Numerator < Denominator

For Example:

$$\frac{1}{5} \text{ [One fifth]} \qquad \frac{2}{6} \text{ [Two sixths]} \qquad \frac{3}{8} \text{ [Three eighths]}$$

Improper fraction

An improper fraction is just a fraction where its numerator is greater than or equal to its denominator.

Numerator = Denominator

Numerator > Denominator

For Example:

$$\frac{4}{4}$$
 [Four fourths], $\frac{8}{3}$ [Eight thirds], $\frac{6}{5}$ [Six fifths] Improper fraction is U greater than or equal to 1

Note that

Improper fraction is

Mixed number

A mixed number is a number made up of a whole number and a proper fraction.

For Example:

$$1\frac{3}{4}$$
 [One and three fourths] , $2\frac{1}{7}$ [Two and one seventh]

$$2\frac{1}{7}$$
 [Two and one seventh]

Remark 1

Any whole number not equal to 0 can be written in the form of an improper fraction.

Examples:

•
$$1 = \frac{1}{1} = \frac{2}{2} = \frac{3}{3} = \frac{4}{4} = --\text{ etc.}$$

•
$$2 = \frac{2}{1} = \frac{4}{2} = \frac{6}{3} = \frac{8}{4} = \dots \text{ etc.}$$

•
$$5 = \frac{5}{1} = \frac{10}{2} = \frac{15}{3} = \frac{20}{4} = --\text{ etc.}$$

•
$$5 = \frac{5}{1} = \frac{10}{2} = \frac{15}{3} = \frac{20}{4} = --\text{etc.}$$
 • $10 = \frac{10}{1} = \frac{20}{2} = \frac{30}{3} = \frac{40}{4} = --\text{etc.}$

Forma 2

Any mixed number can be written as an improper fraction and vice versa.

Notes for parents:

Ask your child what is the difference among a proper fraction, an improper fraction and a mixed number?

Here's how to change from one form to another

To change a mixed number into an improper > fraction, you can multiply then add as shown below.

$$2\frac{1}{4} = \frac{9}{4} \leftarrow \frac{[4 \times 2] + 1}{\text{denominator stays}}$$
the same.

So,
$$2\frac{1}{4} = \frac{9}{4}$$

To change an improper fraction into a mixed number, you can divide.

The fraction bar stands for "divided by" So $\frac{9}{4}$ means "9 ÷ 4"

- 8 1 ← number of fourths

$$9 \div 4 = 2 R1 So$$
, $\frac{9}{4}$ is equal to $2\frac{1}{4}$

Example 1

Observe the model, then answer the following questions:

1. What is the unit fraction used to compose this improper fraction?



- 3. What is the improper fraction represented by this model?
- 4. What is the mixed number that represented by this model?

Solution [V]



1. $\frac{1}{4}$

2. 5

4.1%

Example 2

Draw a model that represents the improper fraction $\frac{8}{3}$

Solution W





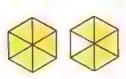




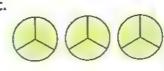
Example 3

Write an improper fraction for the colored parts. Then write each as a mixed number or as a whole number.

a.







d.





Solution You can count unit fractions.

a.
$$\frac{11}{6} = 1\frac{5}{6}$$

b.
$$\frac{5}{3} = 1\frac{2}{3}$$

$$c. \frac{9}{3} = 3$$

d.
$$\frac{19}{5} = 3\frac{4}{5}$$

Ask your child to write the x and + symbols when changing to improper fraction. Marking the arrows to show the direction to follow may help your child do the operations in the correct orders.

Example 4

Write each of the following mixed numbers as an improper fraction.

a.
$$2\frac{3}{4}$$

b. $3\frac{5}{9}$

Solution [V]

a.
$$2\frac{3}{4} = \frac{11}{4}$$
 [Think: $\frac{[4 \times 2] + 3}{4}$]

b.
$$3\frac{5}{8} = \frac{29}{8}$$
 [Think: $[8 \times 3] + 5$]

Example 5

Write each of the following improper fractions as a mixed number.

c.
$$\frac{39}{4}$$

Solution [V]

a.
$$\frac{3}{2} = 1\frac{1}{2}$$
 [Think: 3 ÷ 2 = 1R1]

c.
$$\frac{39}{4} = 9\frac{3}{4}$$
 [Think: 39 ÷ 4 = 9 R 3]

b.
$$\frac{26}{3} = 8\frac{2}{3}$$
 [Think: $26 \div 3 = 8 R 2$]

d.
$$\frac{13}{7} = 1\frac{6}{7}$$
 [Think: 13 ÷ 7 = 1 R 6]

your understanding

1. Draw a model to represent 2 $\frac{2}{3}$

2. Draw a model to represent 15

3. Write each mixed number as an improper fraction.

a. 3
$$\frac{3}{4}$$

b.
$$6\frac{3}{5}$$

4. Write each improper fraction as a mixed number.

Notes for parents:

26

 Let your child check his/her answers by changing improper fractions back to mixed numbers and mixed numbers back to improper fractions.

on lesson 4

Fractions and Mixed Numbers



D	П	М	n	Е	D	Q.	T	٨	ΑĪ	n
_	v	15	v	ь.	ľЪ	-	44		Į'n.	v



From the school book

1. State which is a proper fraction, an improper fraction or a mixed number in each of the following.

a.
$$\frac{5}{6}$$

a.
$$\frac{5}{6}$$
 ————

b.
$$\frac{6}{5}$$

f.
$$3\frac{5}{12}$$

2. Choose the best term from the box.

is a fraction greater than or equal to 1.

A mixed number A proper fraction An improper fraction

is made up of a whole number and a proper fraction.

is a fraction where its numerator is less than its denominator.

3. Choose the correct mixed number for each picture from the box.

$$2\frac{1}{5}$$

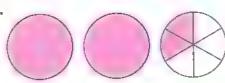
$$2\frac{1}{4}$$

$$3\frac{4}{6}$$

$$2\frac{1}{5}$$
, $2\frac{1}{4}$, $1\frac{1}{3}$, $3\frac{4}{6}$, $2\frac{2}{6}$, $1\frac{2}{5}$

$$1\frac{2}{5}$$

a.



b.





Ċ.



d.

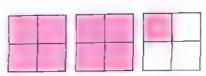




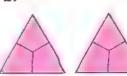


4. Write an improper fraction for the colored parts. Then write each as a mixed number or as a whole number.

a.



b.

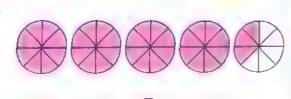




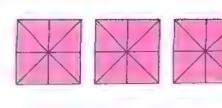




C.



d.



=

5. Shade the model to represent the following mixed numbers, then write the equivalent improper fraction.

a. =
$$3\frac{1}{5}$$









b. -
$$2\frac{1}{3}$$





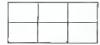


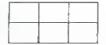
c. 1 ¹/₄

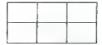




d. 2 ¹₆







6. Write the following fractions in the form of improper fraction and mixed number.

a.





Improper fraction
Mixed number

b.





Improper fraction
Mixed number

c.





[El-Beheira 23]

Improper fraction
Mixed number

d.





Improper fraction
Mixed number

- 7. Draw a model for each of the following mixed numbers. Then write each mixed number as an improper fraction.
 - a. $4\frac{1}{4}$

c. $1\frac{1}{2}$

- d. 3 ²
- 8. Draw a model for each of the following improper fractions. Then write each improper fraction as a mixed number.
 - a. $\frac{3}{2}$

b. $\Box \frac{7}{3}$

c. 🕮 16

- d. $\frac{32}{5}$
- 9. Write each mixed number as an improper fraction.
 - **a.** $\square 3\frac{1}{2} =$

b. $2\frac{1}{6} =$

c. $6\frac{7}{8} =$

- d. $\square 5\frac{1}{4} = -$
- e. 4 1 =
- f. $6\frac{2}{3}$ =

- g. $12\frac{2}{3} =$ ----
- h. $9\frac{1}{4} =$
- i. $8\frac{2}{5}$ =
- 10. Write each improper fraction as a mixed number or as a whole number.
 - a. $\frac{9}{2} = -$

- **b.** $\frac{19}{5}$ =
- c. $\frac{25}{3} =$

d. $\frac{42}{6}$ =

e. $\frac{34}{8}$ =

f. 49 =

g. $\frac{36}{4}$ =

h. $\frac{28}{9}$ =

i. $\frac{23}{4} =$

- 11. Complete.
 - a. The proper fraction has the numerator

than the denominator. [El-Monofia 22]

b. $\frac{7}{2}$ is a/an — fraction.

[Giza - El Omrania 22]

c.3 $\frac{3}{4}$ = — [in the form of an improper fraction]

[Qena 22]

d.3 $\frac{1}{2}$ = —— [as an improper fraction]

(Luxor 23)

e. $2\frac{1}{4}$ = (as an improper fraction)

[Giza 23]

f. 3 $\frac{2}{7}$ =

[as an improper fraction]

(Giza 23)

g.
$$\frac{17}{3}$$
 =

[in the form of a mixed number]

[Port Said 22]

h.
$$\frac{7}{5} =$$

[as a mixed number]

(El-Menia 23)

i.
$$\frac{20}{3}$$
 =

[as a mixed number]

[Cairo - Rod El Farag 23]

j.
$$\frac{17}{4}$$
 = (as a mixed number)

[El-Monofia 23]

$$k. \frac{3}{3} =$$
, $\frac{6}{3} =$, $\frac{9}{3} =$, $\frac{12}{3} =$

$$,\frac{12}{3} =$$

m.
$$\frac{}{7}$$
 = 3

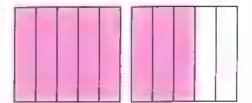
n.
$$_{5}$$
 = 5

o.
$$15 = 5$$

p.
$$\frac{8}{}$$
 = 2

q.
$$\frac{9}{}$$
 = 1

- 12. III Look at the model and answer the questions.
 - a. What unit fraction is used to build this improper fraction?



- b. How many unit fractions are colored?
- c. What is the improper fraction represented by this model?

Challenge

13. Mona baked a cake with a square top for her mom's birthday. She wanted to put a border of frosting on the top of the cake. If one side of the cake measures $\frac{3}{8}$ meter, what is the perimeter of the top of the cake?

Write the answer as both a mixed number and an improper fraction.



Multiple Choice Questions

Choose the correct answer.

1. Which of the following is a proper fraction?

[Cairo 23]

A.
$$\frac{3}{7}$$

B.
$$\frac{5}{2}$$

C.
$$1\frac{1}{3}$$

D.
$$\frac{19}{18}$$

2. Which of the following is an improper fraction?

(Souhag 23]

C. $1\frac{1}{5}$

D. 4

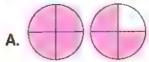
3. Which of the following is a mixed number?

B. $\frac{8}{3}$ [Luxor 23]

C. 2³₅

D. $\frac{2}{9}$

4. The correct model which represents the improper fraction $\frac{7}{6}$ is









5. The opposite model represents



[Alex. 23]

$$c. \frac{4}{5}$$

D. $\frac{5}{4}$

6. 4 ¹₂ =

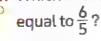
[as an improper fraction]

- B. 7/2 [Cairo 22, El-Beheira 23]

7. 17 is called a/an

[Aswan 23]

- A. proper fraction.
- B. improper fraction.
- C. mixed number.
- D. unit fraction.
- 8. Which of the following mixed numbers is



[El-Beheira 23]

9. $2\frac{3}{4} =$

(as an improper fraction)

[El-Monofia 23]

- A. $1\frac{1}{2}$
- **B.** $1\frac{1}{12}$

- A. $\frac{13}{4}$
- B. 15

- **c.** $1\frac{1}{5}$
- D. 1¹/₆

- $c. \frac{11}{4}$
- **D.** $\frac{10}{4}$

10. $\frac{20}{7} =$ [as a mixed number]

(Cairo - Helwan 22)

- A. $3\frac{1}{7}$
- B. 2 6/7

c. $2\frac{1}{7}$

D. $1\frac{6}{7}$

5 to 7

- Adding and Subtracting Fractions.
- Askling Mixed Numbers
- Subtracting Mixed Numbers

Learn 1 Adding and subtracting fractions

Wael recorded the distances he covered in swimming in five days.

- 1. How many km did Wael swim altogether during the 5 days?
- 2. How much further did Wael swim on Thursday than on Wednesday?

Answer:

1. You can add to find the total distance he covered.

Add.
$$1+1+1+\frac{3}{5}+\frac{4}{5}$$

Wael's Swimming Record

Day	Distance
Monday	1km
Tuesday	1km
Wednesday	$\frac{3}{5}$ km
Thursday	1 km
Friday	$\frac{4}{5}$ km
	o 1 A



One Way [Use models]

$$1 + 1 + 1 + \frac{3}{5} + \frac{4}{5} = \frac{22}{5} = 4\frac{2}{5}$$













 $[Think: 22 \div 5 = 4R2]$

Another Way

$$[1 + 1 + 1] + [\frac{3}{5} + \frac{4}{5}]$$
= 3 + $\frac{7}{5}$ [Think: $7 \div 5 = 1R2$]
= 3 + $1\frac{2}{5} = 4\frac{2}{5}$

MATH IDEA ,

To add fractions with common denominators, add the numerators and then write the sum over the common denominator

$$\frac{3}{5} + \frac{4}{5} = \frac{7}{5}$$

Third Way

1 + 1 + 1 +
$$\frac{3}{5}$$
 + $\frac{4}{5}$ [Think: 1= $\frac{5}{5}$]
 $\frac{5}{5}$ + $\frac{5}{5}$ + $\frac{5}{5}$ + $\frac{3}{5}$ + $\frac{4}{5}$ = $\frac{22}{5}$ = $4\frac{2}{5}$

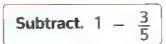
So, Wael swam $4\frac{2}{5}$ km during the 5 days.

Notes for parents:

Help your child to use models to add fractions.



2. You can subtract to find the difference.



One Way

Use a model

$$1 - \frac{3}{5} = \frac{2}{5}$$



Another Way

$$1 - \frac{3}{5} = \frac{5}{5} - \frac{3}{5} = \frac{2}{5}$$

So, Wael swam $\frac{2}{5}$ km on Thursday further than on Wednesday.

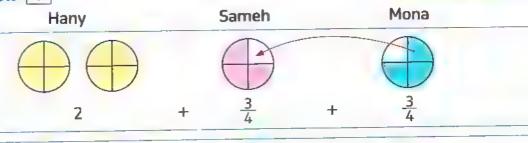
Example 1

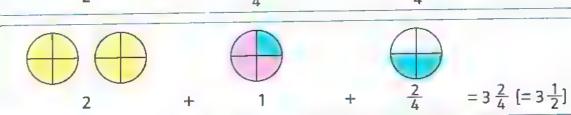
Hany has 2 pizzas, Sameh has $\frac{3}{4}$ pizza and Mona has $\frac{3}{4}$ pizza.

Use models to find the total they have.



Solution 🖤





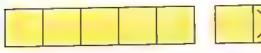
Example 2

Hany walks 2 km every day. Sally walks $\frac{4}{5}$ km every day.

How much further does Hany walk than Sally?

You may draw models to help.

Solution 🕎





So, Hany walks $1\frac{1}{5}$ further than Sally.



Another Way

$$2 = \frac{10}{5}$$
 [Because 2 × 5 = 10]

$$2 - \frac{4}{5} = \frac{10}{5} - \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$$

[·] Help your child to use models to subtract fractions.

Example 3

Solve each of the following problems.

a.
$$6 + \frac{1}{5} + \frac{2}{5} + \frac{1}{5}$$

b.
$$\frac{4}{9} + \frac{5}{9} + 2$$

c.
$$1+2+\frac{2}{3}+\frac{2}{3}$$

d.
$$1 - \frac{3}{4}$$

e.
$$2 - \frac{5}{8}$$

f.
$$1 - \frac{2}{7} - \frac{1}{7}$$

Solution [V]

a.
$$6 + \frac{1}{5} + \frac{2}{5} + \frac{1}{5}$$

$$= 6 + \frac{4}{5} = 6\frac{4}{5}$$

b.
$$\frac{4}{9} + \frac{5}{9} + 2$$

= $\frac{9}{9} + 2 = 1 + 2 = 3$

c.
$$1 \div 2 + \frac{2}{3} + \frac{2}{3}$$

= $3 + \frac{4}{3}$ [Think: $\frac{4}{3} = 1\frac{1}{3}$]
= $3 + 1\frac{1}{3} = 4\frac{1}{3}$

d.
$$1 - \frac{3}{4} = \frac{4}{4} - \frac{3}{4}$$
$$= \frac{1}{4}$$

e.
$$2 = \frac{16}{8}$$
 [Because: 2 × 8 = 16]

$$2 - \frac{5}{8} = \frac{16}{8} - \frac{5}{8} = \frac{11}{8} = 1\frac{3}{8}$$

f.
$$1 - \frac{2}{7} - \frac{1}{7} = \frac{7}{7} - \frac{2}{7} - \frac{1}{7}$$

= $\frac{5}{7} - \frac{1}{7} = \frac{4}{7}$

your understanding

Solve each of the following.

a.
$$1 + \frac{3}{5} + \frac{1}{5} + 2$$

b.
$$2 + 1 + \frac{5}{6} + \frac{2}{6}$$

c. $1 - \frac{2}{5}$

d.
$$2 - \frac{2}{9}$$

Notes for parents:

- Give you child a statement as : $\frac{1}{5} + \frac{2}{5} = \frac{3}{10}$, ask him/her what is the error in this statement. Ask him/her to rewrite it in a right way.
- Help your child to understand how 2 is equal to $\frac{16}{8}$
- · Help him/her to draw two circles and divide each one to eight equal parts. Ask him/her to count all parts which are 16 eighths.

Learn 2 Adding and subtracting mixed numbers with like denominators

Adding mixed numbers with like denominator

On Friday, Samy practiced football $2\frac{2}{4}$ hours. On Saturday, he practiced $1\frac{1}{4}$ hour.

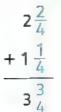
How many hours did Samy practice football in the two days?

Add.
$$2\frac{2}{4} + 1\frac{1}{4}$$

One Way

[Use models]--

- Draw a model for each mixed number.
- Add the fractions. [Count the number of fourths colored].
- Add the whole numbers. [Count the number of whole rectangles colored].

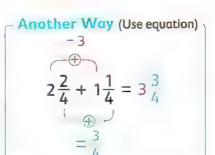












So, Samy practiced football $3\frac{3}{4}$ hours in the two days.

Subtracting mixed numbers with like denominators

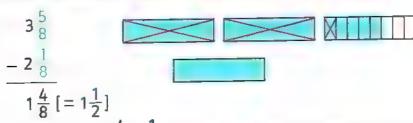
Subtracting mixed numbers is similar to adding mixed numbers.

Bassem rode $3\frac{5}{8}$ km on Saturday. He rode $2\frac{1}{8}$ km on Monday. How much further did he ride on Saturday?

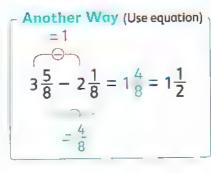
Subtract.
$$3\frac{5}{8} - 2\frac{1}{8}$$

One Way [Use models]—

- Draw a model for the first mixed number.
- Subtract the fractions. [Cross off 1 of the colored parts].
- Subtract the whole numbers. [Cross off 2 whole rectangles].







So, Bassem rode $1\frac{4}{8}[1\frac{1}{2}]$ on Saturday further than on Monday.

- Help your child understand that when adding mixed numbers he/she can add whole numbers first then add fractions.
- Remind your child that he/she sometimes can subtract whole numbers first, then subtract fractions.

Example 4

Solve each of the following. You may draw models to help.

a.
$$2\frac{3}{8} + 2\frac{2}{8}$$

b.
$$1\frac{4}{5} + \frac{1}{5}$$

c.
$$4\frac{3}{6} + 2\frac{4}{6}$$

d.
$$3\frac{3}{5} - 2\frac{1}{5}$$

e.
$$6 - 3\frac{3}{4}$$

f.
$$5\frac{1}{3}-2\frac{2}{3}$$

Solution (*)

а

$$2\frac{3}{8} + 2\frac{2}{8} = 4\frac{5}{8}$$

$$= \frac{5}{8}$$

b.

$$1\frac{4}{5} + \frac{1}{5} = 1\frac{5}{5} = 2$$
[Hint: $\frac{5}{5} = 1$ So, $1\frac{5}{5} = 1 + 1 = 2$]

C.

$$4\frac{3}{6} + 2\frac{4}{6} = 6\frac{7}{6}$$
 [Rename $\frac{7}{6}$ as $1\frac{1}{6}$]
= $6 + 1\frac{1}{6} = 7\frac{1}{6}$

d.

$$3\frac{3}{5} - 2\frac{1}{5} = 1\frac{2}{5}$$

$$= \frac{2}{5}$$

e

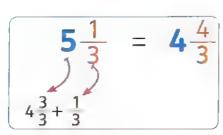
$$6-3\frac{3}{4}$$
 [Rename 6 as $5\frac{4}{4}$]
= $5\frac{4}{4} - 3\frac{3}{4} = 2\frac{1}{4}$

f

$$5\frac{1}{3}-2\frac{2}{3}$$
 The numerator 1 is less than the numerator 2, so you can't subtract

[Rename 5 as
$$4\frac{3}{3}$$
, so $5\frac{1}{3} = 4\frac{4}{3}$]

$$5\frac{1}{3} - 2\frac{2}{3} = 4\frac{4}{3} - 2\frac{2}{3} = 2\frac{2}{3}$$



Notes for parents :

- · Choose any problem in this page, ask your child how he/she can solve it.
- Help your child to rename the mixed number 6 ¹/₄

Example 5

Complete each of the following.

a.
$$2\frac{1}{5} + \frac{.}{-} = 7\frac{4}{5}$$

c.
$$7\frac{2}{3}$$
 - = $5\frac{1}{3}$

b.
$$+1\frac{3}{4} = 3\frac{1}{4}$$

Solution [

a. Subtract to find the missing addend
$$7\frac{4}{5} - 2\frac{1}{5} = 5\frac{3}{5}$$

b. Subtract to find the missing addend

$$3\frac{1}{4} - 1\frac{3}{4} = 2\frac{5}{4} - 1\frac{3}{4} = 1\frac{2}{4}$$

$$2\frac{4}{4} + \frac{1}{4} = 2\frac{5}{4}$$

Subtract to find the missing subtrahend

$$7\frac{2}{3} - 5\frac{1}{3} = 2\frac{1}{3}$$

d. Add to find the missing minuend

$$3\frac{2}{7} + 2\frac{3}{7} = 5\frac{5}{7}$$

Using a number line to add and subtract mixed numbers with like denominators

You can use a number line to add or subtract mixed numbers as in the following example.

Example 6

Use a number line to add or subtract.

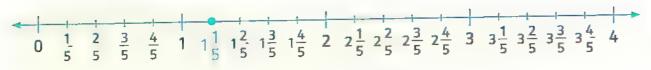
a.
$$1\frac{1}{5} + 2\frac{2}{5}$$

b.
$$3\frac{3}{4} - 1\frac{1}{4}$$

Solution a. • Draw a number line

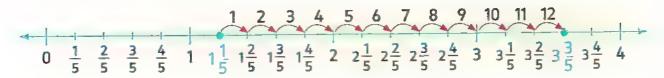


• Divide the distance between each two numbers into 5 equal parts, each part represents $\frac{1}{5}$ Locate 1 $\frac{1}{5}$ on the number line.



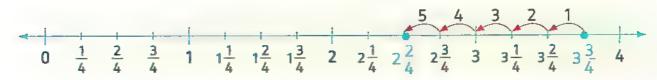
Remind your child that he/she need to divide the distance between the 2 numbers on the number line into
equal parts. The number of these parts equal the denominator when dividing the distance into 5 equal parts,
he/she need to draw 4 small dashes.

• Rename $2\frac{2}{5}$ as $\frac{12}{5}$. Start at $1\frac{1}{5}$ Count forward 12 times. You will reach $3\frac{3}{5}$



$$1\frac{1}{5} + 2\frac{2}{5} = 3\frac{3}{5}$$

b. Divide the distance between each two numbers into 4 equal parts, each part represents $\frac{1}{4}$ Rename $1\frac{1}{4}$ as $\frac{5}{4}$. Start at $3\frac{3}{4}$. Count backward 5 times to subtract. You will reach $2\frac{2}{4}$



$$3\frac{3}{4} - 1\frac{1}{4} = 2\frac{2}{4}$$

your understanding

Model and record the sum or the difference.

a.
$$5\frac{1}{6} + 2\frac{4}{6}$$

b.
$$5\frac{3}{8}+1\frac{5}{8}$$

c.
$$2\frac{3}{4} + 3\frac{3}{4}$$

d.
$$3\frac{5}{6} - 2\frac{1}{6}$$

f.
$$5\frac{1}{5} - 2\frac{3}{5}$$

Notes for parents:

[·] Ask your child to choose any problem in this page and solve it in more than one way.



* Adding and Subtracting Fractions

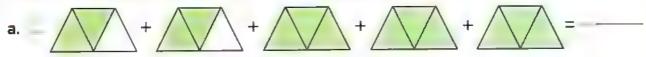
- * Adding Mixed Marphers
- Subtracting Mixed Numbers

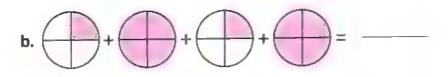
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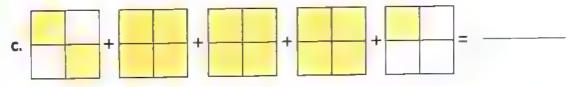
O APPLY - ROBLEM SOLVING

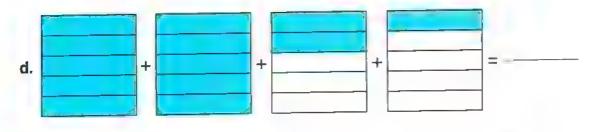
From the school book

1. Rewrite the problem with whole numbers and proper fractions, then solve the problems.









2. Solve the following problems using numbers.

c.
$$\square \frac{10}{12} + \frac{1}{12} + 3 + 2 = -$$

e.
$$3+4+\frac{1}{2}=$$

g.
$$\square 4 + \frac{4}{8} + 2 + \frac{5}{8} =$$

b.
$$4 + \frac{1}{9} + \frac{2}{9} + 4 = -$$

d.
$$1+1+\frac{1}{7}+\frac{1}{7}+\frac{1}{7}=$$

f.
$$2+2+\frac{3}{5}+\frac{3}{5}=$$

__ h.
$$\pm \frac{3}{6} + 5 + \frac{5}{6} + 2 = -$$

3. Use models to solve the following problems.





d.
$$\square 1 - \frac{2}{8} =$$

g.
$$\square 2 - \frac{2}{3} = -$$

b.
$$21 - \frac{2}{5} - \frac{1}{5} = -$$



h.
$$= 3 - \frac{1}{3} =$$
 i. $4 - \frac{5}{6} =$...

b.
$$2 - \frac{1}{5} = \frac{1}{5} = \frac{1}{5} = \frac{1}{5} = \frac{1}{5} = \frac{2}{5} = \frac{2}{$$

f.
$$2-\frac{1}{2}=$$

i.
$$4 - \frac{5}{6} =$$

4. Solve the following problems. Show your steps.

a.
$$\frac{5}{12} + \frac{2}{12} + \frac{6}{12} =$$

a.
$$\frac{5}{12} + \frac{2}{12} + \frac{6}{12} =$$
 [New Cairo 22] **b.** $1 + 2 + \frac{1}{5} + \frac{3}{5} + \frac{4}{5} =$

c.
$$1 - \frac{3}{6} - \frac{1}{6} =$$

d.
$$2-\frac{1}{3}-\frac{1}{3}=$$

e.
$$1 + \frac{1}{7} + 2 + \frac{3}{7} =$$

f.
$$3 - \frac{2}{3} - \frac{1}{3} =$$

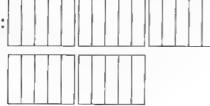
5. Add or subtract mixed numbers. Solve each problem using a number line, a model and an equation. For each model, color the first fraction one color and use a different color for the second fraction.

a.
$$2\frac{1}{5} + 1\frac{2}{5}$$

Number line:



Model:



Equation:

b.
$$1\frac{1}{4} + \frac{3}{4}$$

Number line:



Model:



Equation:



c. $2\frac{1}{6} + 1\frac{5}{6}$

Number line:



Model: (

Equation:

d. $4\frac{3}{4} - 2\frac{1}{4}$

Number line:



Model:

Equation:

 $5-2^{1}_{6}$

Number line:



Model:

Equation:

 $3-1\frac{1}{6}$ f.

Number line:

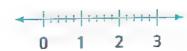


Model:

Equation:

g. $2\frac{1}{5}-1\frac{2}{5}$

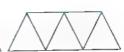
Number line:



Model:







Equation:

6. Solve the following problems using your favorite strategy. (Explain your steps).

a.
$$2\frac{4}{9} + 1\frac{2}{9}$$

d.
$$1+1\frac{1}{6}$$

(Aswan 22)

g.
$$3\frac{2}{5} - 2\frac{1}{5}$$

b.
$$2\frac{3}{5}+1\frac{4}{5}$$

e.
$$5\frac{5}{6} + 2\frac{1}{6}$$

h.
$$2\frac{6}{9} - 1\frac{2}{9}$$

k.
$$3\frac{2}{5}-1\frac{4}{5}$$

c.
$$3\frac{2}{5} + 1\frac{1}{5}$$
 [El-Beheira 23]

e.
$$5\frac{5}{6} + 2\frac{1}{6}$$
 [Souhag 22] f. $2\frac{1}{7} + 3\frac{3}{7}$ [Cairo 23]

h.
$$2\frac{6}{9}-1\frac{2}{9}$$
 [El-Monofia 22] **i.** $3\frac{4}{7}-1\frac{3}{7}$ [El-Beheira 23]

L
$$2+1\frac{1}{7}+3\frac{3}{7}$$
 [Souhag 23]

7. Complete.

a. $7\frac{7}{9} - 4\frac{4}{9} =$ [Souhag 23]

c. $1 - \frac{2}{3} =$ [Alex. 23]

e. $5-2\frac{1}{3}=$ [Giza 23]

i. $1 - \frac{1}{7} - \frac{2}{7} = ----$ [Ismailia 23]

 k_{i} $4\frac{5}{4}$ = $-\frac{5}{6}$ [El-Menia 23]

m. $-2\frac{1}{4} = 3\frac{2}{4}$

o. $4\frac{4}{5}$ = $1\frac{1}{5}$

q. $---+1\frac{1}{7}=3$

s. 5 - = $3\frac{1}{4}$

b. $3\frac{2}{5} - 2\frac{1}{5} =$ [Kafr El-Sheikh 23]

d. $3 - \frac{1}{10} =$ [El-Menia 23]

f. $2\frac{1}{7} + 3\frac{3}{7} =$ [Giza 23, Cairo 23]

g. $3\frac{2}{5} + 2\frac{3}{5} =$ [Kafr El-Sheikh 23] h. $6 + \frac{2}{5} + 2 + \frac{3}{5} =$ [Kafr El-Sheikh 23]

j. $3\frac{2}{5} + \cdots = 4\frac{3}{5}$

L. $7\frac{5}{9}$ = $3\frac{1}{9}$

n. $-3\frac{1}{3} = 1\frac{1}{3}$

 $\mathbf{p.} \qquad -1\frac{5}{7} = 2\frac{3}{7}$

r. $2\frac{3}{4} + \cdots = 4\frac{1}{4}$

Story Problems

8. Ahmed has a number of seeds. On Friday he planted $\frac{3}{9}$ of them, and he planted $\frac{5}{9}$ of them on Saturday. What fraction represents the seeds that Ahmed planted in both of the two days? (El-Beheira 23)

9. Salma went to market and bought $3\frac{1}{8}$ kg of banana and $1\frac{5}{8}$ kg of apple. How many kilograms did Salma buy?

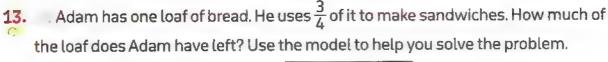
(Aswan 23)

10. Self studied Math for $1\frac{1}{4}$ hour and science for $\frac{3}{4}$ hour. How many hours did Self study in all? [El-Menia 23]

11. Manar is making a drink that requires $\frac{5}{8}$ liter of milk, and she has only $\frac{2}{8}$ liter of milk. How much milk does Manar need more to make the drink? [Giza 22]



12. Waleed ate $2\frac{3}{8}$ of cakes and Ali ate $1\frac{1}{8}$ of cakes of the same size, what is the difference between what Waleed ate and what Ali ate? [El-Monofia 23]





Mona has $24\frac{1}{2}$ pounds, she bought a doll for $22\frac{1}{2}$ pounds. How much money left with her?

(Giza 23)

- 15. Hady has $3\frac{1}{4}$ cookies, he gave $2\frac{3}{4}$ to his sister. How many cookies does he have left?
- 16. Ezz bakes a cake for his grandmother.

 If he has $2\frac{1}{4}$ pans of butter, and the recipe needs $1\frac{2}{4}$ pans of butter. How much butter left will he have?



17. Madia is making falafel for a party.
Her recipe calls for \$\frac{1}{2}\$ teaspoon sodium bicarbonate. The recipe makes enough for 10 people. Nadia is having 40 guests. In order to feed all her guests, she wants to quadruple her recipe. How many teaspoons of sodium bicarbonate will she use ?



Challenge

18. Write and solve your own addition story problem. You can use one of the equations provided to create your own.

$$2\frac{2}{9} + 3\frac{5}{9}$$

$$1\frac{4}{5} + 2\frac{1}{5}$$

$$3\frac{3}{10}+1\frac{9}{10}$$



Choose the correct answer.

(Kafr El-Sheikh 23)

A.
$$2\frac{1}{4}$$

B.
$$2\frac{1}{2}$$

C.
$$2\frac{3}{4}$$

2.
$$\frac{5}{9} + \frac{4}{9} =$$

3.
$$4 + \frac{7}{11} + 2 + \frac{1}{11} =$$

(Assiut 22)

A.
$$\frac{1}{9}$$

B.
$$\frac{9}{18}$$

C.
$$2\frac{6}{11}$$

D.
$$7\frac{8}{11}$$

4.
$$1\frac{1}{4} + \frac{3}{4} =$$

5.
$$\frac{1}{5} + \frac{3}{5} + \frac{3}{5} = 1$$

[El-Menia 23]

A.
$$2\frac{1}{4}$$

A.
$$\frac{1}{5}$$

B.
$$\frac{2}{5}$$

D.
$$2\frac{3}{4}$$

$$c. \frac{3}{5}$$

6.
$$4 + \frac{1}{3} = -$$

7.
$$3 + \frac{2}{5} + 1 + \frac{1}{5} =$$

[Ismailia 23]

A.
$$4\frac{1}{3}$$

B.
$$\frac{4}{3}$$

A.
$$2\frac{3}{5}$$

B.
$$4\frac{3}{5}$$

c.
$$\frac{12}{3}$$

D.
$$5\frac{1}{3}$$

C.
$$2\frac{1}{5}$$

D.
$$\frac{7}{5}$$

8.
$$\frac{6}{10} - \frac{2}{10} =$$

9.
$$3\frac{5}{8} - 2\frac{1}{8} =$$

[Assiut 23]

B.
$$\frac{4}{10}$$

A.
$$2\frac{6}{8}$$

D.
$$\frac{8}{20}$$

C.
$$1\frac{6}{8}$$

D.
$$1\frac{4}{8}$$

10.
$$1-\frac{3}{5}=$$

11.
$$2 - \frac{5}{7} =$$

A.
$$\frac{2}{5}$$
 C. $\frac{2}{4}$

B.
$$\frac{3}{5}$$

A.
$$1\frac{2}{7}$$

C.
$$\frac{2}{4}$$

D.
$$\frac{2}{10}$$

c.
$$\frac{10}{7}$$

D.
$$1\frac{5}{7}$$

12.
$$6-3\frac{1}{4}=$$

13.
$$\frac{1}{5} + \frac{2}{5} - \frac{2}{5} =$$

A.
$$3\frac{1}{4}$$

B.
$$9\frac{1}{4}$$

A.
$$\frac{2}{5}$$

B.
$$\frac{1}{5}$$

C.
$$2\frac{3}{4}$$

D.
$$2\frac{1}{4}$$

D,
$$\frac{6}{5}$$

Concept Comparing Fractions

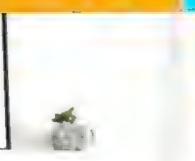
Did you know ?!

Earth, our home planet is called the Blue Planet About $\frac{1}{10}$ of the Earth's surface is covered with water, while $\frac{3}{10}$ only of its surface is land.

detector who	erman Meric	. ન કોર્યક તે હું કો કેલ્લ પ્રાયમ ક				
Lesson 8	Comparing Fractions with Like Denominators or Numerators	 Students will compare and order fractions with like denominators. Students will compare and order fractions with like numerators. 				
Lesson 9	Same Fraction, Different Ways	Students will use visual models to generate equivalent fractions. Students will explain what makes two fractions equivalent.				
Lessons	Benchmark Fractions	Students will identify benchmark fractions. Students will generate fractions equivalent to benchmark fractions.				
10 & 11	Applications on the Benchmark Fractions	Students will compare fractions to a benchmark fraction.				



Comparing Fractions with Like Dennminaturs or Numerators



Learn 1

Compare and order fractions with like denominators

Sara and Laila had two identical bars of chocolate.

Sara ate $\frac{2}{5}$ of her bar. Laila ate $\frac{4}{5}$ of her bar.

Who ate the greater part?



Model $\frac{2}{5}$ and $\frac{4}{5}$ [The colored parts show what each one ate]

Sara Laila

By comparing the colored parts, 2 < 4

So, $\frac{2}{5} < \frac{4}{5}$ So, Laila ate the greater part.

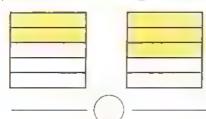


ALERT

When you compare two fractions, make sure the wholes are the same size.



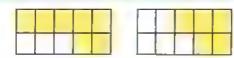
Write the fractions which represent the colored parts, then compare fractions using "< , = or >".



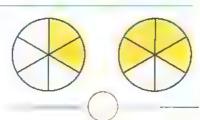
b.







d.



Solution [17]

a.
$$\frac{2}{5}$$
 < $\frac{3}{5}$

b.
$$\frac{5}{8}$$
 > $\frac{4}{8}$

a.
$$\frac{2}{5}$$
 < $\frac{3}{5}$ | b. $\frac{5}{8}$ > $\frac{4}{8}$ c. $\frac{7}{10}$ > $\frac{5}{10}$ | d. $\frac{2}{6}$ < $\frac{4}{6}$

d.
$$\frac{2}{6}$$
 < $\frac{4}{6}$

Notes for parents:

• Ask your child to draw a model to compare $\frac{3}{4}$ and $\frac{2}{4}$.



When you compare fractions with like denominators, only compare the numerators.

The one with the greater numerator is the greater.

For example:

 $\frac{5}{7} > \frac{3}{7}$ because they have the same denominator "7" and 5 > 3

Example 2

Compare the following fractions using ">, < or =".

- b. $\frac{5}{7}$ $\frac{2}{7}$ c. $\frac{3}{8}$ $\frac{5}{8}$

Solution [V

- a. < [Because 1 < 3]
- c. < [Because 3 < 5]

- b. > [Because 5 > 2]
- d. < [Because 3 < 6]</p>

Example 3

Write $\frac{7}{9}$, $\frac{1}{9}$, $\frac{6}{9}$, $\frac{2}{9}$ and $\frac{4}{9}$ in an ascending order.

Solution [V]

The order is: $\frac{1}{9}$, $\frac{2}{9}$, $\frac{4}{9}$, $\frac{6}{9}$, $\frac{7}{9}$

Because the fractions have the same denominator "9" and1 < 2 < 4 < 6 < 7

Remember

Ascending order is ordering numbers from least to greatest.



vour understanding

1. Compare. Write ">, < or =" for each

- a. $\frac{3}{6}$ b. $\frac{1}{10}$ $\frac{7}{10}$

2. Write the fractions in an ascending order.

a. $\frac{2}{7}$, $\frac{5}{7}$, $\frac{1}{7}$ and $\frac{4}{7}$ The order is:

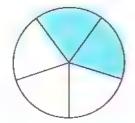
b. $\frac{9}{12}$, $\frac{1}{12}$, $\frac{6}{12}$, $\frac{8}{12}$ and $\frac{3}{12}$ The order is:

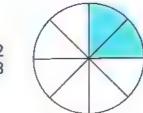
Ask your child to compare numerators to determine which fraction is greater when comparing fractions with like denominators.

Learn 2

Compare and order fractions with like numerators

How can you compare $\frac{2}{5}$ and $\frac{2}{8}$?





ERROR ALERT

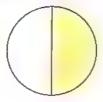
By comparing the colored parts, you get $\left| \frac{2}{5} \right| > \frac{2}{8}$

When you compare two fractions, make sure the wholes are the same size.

Example 4

Write the fractions which represent the colored parts, then compare fractions using "< , = or >".

a.



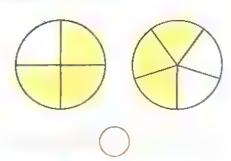


b.

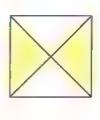


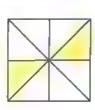


Ç.



d.





Solution [



b.
$$\frac{2}{7}$$
 < $\frac{2}{5}$

c.
$$\frac{3}{4}$$
 > $\frac{3}{5}$

Notes for parents:

• Ask your child to draw a model to compare $\frac{3}{4}$ and $\frac{3}{6}$



When you compare fractions with like numerators, only compare the denominators.

The one with the greater denominator is the smaller.

For example:

 $\frac{2}{5} < \frac{2}{3}$ because they have the same numerator "2" and 5 > 3

Example 5

Compare the following fractions using "<< ,> or =".

- **a.** $\frac{1}{7}$ **b.** $\frac{4}{12}$ **c.** $\frac{3}{5}$ **d.** $\frac{5}{11}$ **d.** $\frac{5}{5}$

Solution [V

- a. > [Because 9 > 7]
- c. > [Because 10 > 5]

- b. < [Because 12 > 6]
- d. < [Because 11 > 5]

Example 6

Write $\frac{3}{12}$, $\frac{3}{7}$, $\frac{3}{9}$, $\frac{3}{5}$ and $\frac{3}{10}$

in a descending order.

Colution [

The order is: $\frac{3}{5}$, $\frac{3}{7}$, $\frac{3}{9}$, $\frac{3}{10}$, $\frac{3}{12}$

Because the fractions have the same numerator "3" and 5 < 7 < 9 < 10 < 12

Remember

Descending order is ordering numbers from greatest to least.



your understanding

1. Compare. Write ">, < or =" for each

2. Write the fractions in a descending order.

- a. $\frac{2}{8}$, $\frac{2}{10}$, $\frac{2}{4}$ and $\frac{2}{5}$ The order is:
- b. $\frac{4}{7}$, $\frac{4}{11}$, $\frac{4}{5}$, $\frac{4}{8}$ and $\frac{4}{6}$ The order is:

Ask your child to compare denominators to determine which fraction is greater when comparing fractions with like numerators.

Comparing Practions with Like Denominators or Numerators



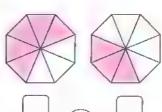




From the school book

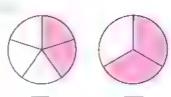
1. Write the fractions which represent the colored parts, then compare each pair of fractions using the symbols ">, < or =".

a.



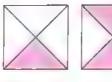






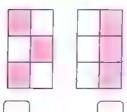


Ç.



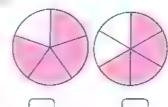


d.

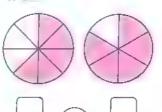


symbols ">, < or =".

e. ´

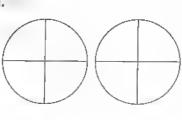


f. .



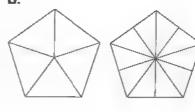
2. Shade each shape to show the given fraction, then compare the fractions using the

a.





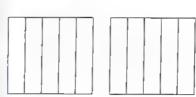
b.





3 10

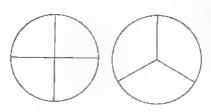
C. .



3/5

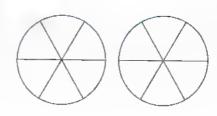


d.

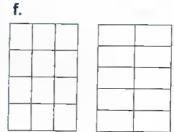




e.







<u>6</u> 12



<u>6</u> 10

Compare. Write "> , < or =".

a.
$$\frac{2}{3}$$

b.
$$\frac{5}{12}$$

d.
$$\frac{2}{9}$$

e.
$$\frac{4}{7}$$

f.
$$=\frac{4}{8}$$

g.
$$\frac{3}{8}$$

4. Circle the correct fraction.

a.
$$\frac{2}{4} >$$

$$\left[\begin{array}{cc} 2 & \text{or } \frac{2}{5} & \text{or } \frac{2}{2} \end{array}\right]$$
 b. $\frac{1}{5} < \Box$

b.
$$\frac{1}{5} <$$

$$\left[\frac{1}{6} \text{ or } \frac{1}{8} \text{ or } \frac{1}{4}\right]$$

$$\left[\frac{3}{8} \text{ or } \frac{3}{3} \text{ or } \frac{3}{6}\right]$$

d.
$$\frac{4}{6} >$$

$$\left[\begin{array}{c} 4\\5 \text{ or } \frac{4}{4} \text{ or } \frac{4}{9} \end{array}\right]$$

e.
$$\frac{5}{10}$$
 <

$$\left[\frac{5}{8} \text{ or } \frac{5}{11} \text{ or } \frac{5}{15}\right]$$

f.
$$> \frac{3}{5}$$

$$\left[\frac{3}{7} \text{ or } \frac{3}{3} \text{ or } \frac{3}{9}\right]$$

g.
$$\frac{3}{5}$$
 <

$$\left[\frac{1}{5} \text{ or } \frac{2}{5} \text{ or } \frac{4}{5}\right]$$
 h. $\frac{7}{10} < \left[\frac{1}{5} \text{ or } \frac{2}{5} \text{ or } \frac{4}{5}\right]$

h.
$$\frac{7}{10} <$$

$$\left[\frac{8}{10} \text{ or } \frac{5}{10} \text{ or } \frac{6}{10}\right]$$

5. Order the following fractions in an ascending order.

a.
$$\frac{4}{11}$$
, $\frac{1}{11}$, $\frac{9}{11}$, $\frac{6}{11}$

[El-Monofia 23] b.
$$\frac{2}{7}$$
, $\frac{4}{7}$, $\frac{8}{7}$, $\frac{3}{7}$ [Alex. 23]

c.
$$= \frac{6}{8}$$
, $\frac{2}{8}$, $\frac{5}{8}$, $\frac{3}{8}$, $\frac{7}{8}$, $\frac{1}{8}$, $\frac{8}{8}$

d.
$$\frac{2}{5}$$
, $\frac{2}{9}$, $\frac{2}{3}$, $\frac{2}{10}$, $\frac{2}{4}$ [El-Beheira 23]

e.
$$\frac{3}{5}$$
, $\frac{3}{8}$, $\frac{3}{6}$, $\frac{3}{12}$

f.
$$\frac{3}{5}$$
 , $\frac{3}{8}$, $\frac{3}{3}$, $\frac{3}{6}$, $\frac{3}{12}$

$$g, \frac{5}{3}, \frac{1}{3}, 1$$

6. Order the following fractions in a descending order.

a.
$$\frac{3}{7}$$
, $\frac{1}{7}$, $\frac{5}{7}$, $\frac{4}{7}$

b.
$$\frac{1}{7}$$
 , $\frac{1}{5}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{10}$

c.
$$\frac{2}{11}$$
 , $\frac{5}{11}$, $\frac{7}{11}$, $\frac{4}{11}$, $\frac{3}{11}$

d.
$$\frac{5}{11}$$
 , $\frac{5}{6}$, $\frac{5}{7}$, $\frac{5}{9}$, $\frac{5}{5}$

7. Compare the fractions.

a. 4 2

- **b.** $\frac{5}{10}$ $\frac{5}{2}$
- c. Do the improper fractions follow the same rule you wrote about how to compare fractions with common numerators? How do you know? Use a model to explain your thinking.

- 8. Each of Othman and Ramzy has a bar of sweet of the same size. If Othman ate $\frac{4}{6}$ of his bar and Ramzy ate $\frac{4}{8}$ of his bar. Who ate more? [Cairo Khalifa and Mokattem 22]
- 9. Ganna ate 3/6 of her kofta and kabab plate. Lamia ate 3/4 of her plate. If the two plates of kofta and kabab with the same size, who ate more? Use model to explain your thinking.



10. 🕮 Fractional Candy Bars:

Would you rather have $\frac{5}{12}$ of a candy bar or $\frac{6}{12}$? Use numbers, pictures, or words to explain your thinking.



Choose the correct answer.

- 1. Which of the following fractions is the least?
- A. $\frac{1}{5}$ B. $\frac{2}{5}$ C. $\frac{3}{5}$ D. $\frac{4}{5}$
- Which of the following fractions is the greatest?
- A. $\frac{3}{5}$ B. $\frac{3}{4}$ C. $\frac{3}{7}$ D. $\frac{3}{8}$

3. $\frac{2}{7}$ \bigcirc $\frac{5}{7}$

[Kafr El-Sheikh 23]

- A. > B. <
- C. =

- $\frac{4}{5} \frac{3}{5} \frac{3}{7}$
- B. =
- [Souhag 23]
- C. >

5. $\frac{1}{4} < \frac{1}{4}$

A. 8

C. 5

[El-Fayoum 22]

6. Which relation is correct?

[El-Menia 23, Suez - South 22]

- B. 7
- **D**. 3

- A. $\frac{7}{12} > \frac{7}{9}$
- C. $\frac{7}{13} < \frac{7}{11}$
- B. $\frac{7}{9} < \frac{7}{10}$ D. $\frac{7}{15} > \frac{7}{9}$

Which of the following sentences

is NOT true?

A. $\frac{2}{5} > \frac{4}{5}$

C. $\frac{6}{7} < \frac{7}{7}$

- B. $\frac{1}{6} < \frac{3}{6}$
- $\mathbf{D}. \frac{5}{8} > \frac{3}{8}$

(Aswan 23)

8. Which relation is correct?

[Cairo - El Sayda Zainab 22]

- A. $\frac{3}{7} > \frac{5}{7}$
- B. $\frac{6}{7} < \frac{4}{7}$
- C. $\frac{1}{7} > \frac{3}{7}$
- D. $\frac{1}{7} < \frac{5}{7}$

9. 4 >

10. $\frac{2}{9} <$ ——
A. $\frac{2}{7}$

(El-Beheira 23)

B. $\frac{5}{9}$

B. $\frac{2}{10}$

C. 1

D. $\frac{8}{9}$

C. $\frac{2}{11}$

D. $\frac{2}{12}$

- 11. Which choice shows the fractions in an ascending order?
 - A. $\frac{2}{12}$, $\frac{4}{12}$, $\frac{6}{12}$, $\frac{5}{12}$, $\frac{8}{12}$
- B. $\frac{2}{12}$, $\frac{4}{12}$, $\frac{5}{12}$, $\frac{6}{12}$, $\frac{8}{12}$
- c. $\frac{2}{12}$, $\frac{4}{12}$, $\frac{6}{12}$, $\frac{8}{12}$, $\frac{5}{12}$
- D. $\frac{8}{12}$, $\frac{6}{12}$, $\frac{5}{12}$, $\frac{4}{12}$, $\frac{2}{12}$
- 12. Which choice shows the fractions in a descending order?
 - A. $\frac{3}{10}$, $\frac{3}{9}$, $\frac{3}{7}$, $\frac{3}{5}$, $\frac{3}{3}$
- B. $\frac{3}{5}$, $\frac{3}{7}$, $\frac{3}{9}$, $\frac{3}{10}$, $\frac{3}{3}$

c. $\frac{3}{3}$, $\frac{3}{5}$, $\frac{3}{7}$, $\frac{3}{9}$, $\frac{3}{10}$

D. $\frac{3}{3}$, $\frac{3}{10}$, $\frac{3}{9}$, $\frac{3}{7}$, $\frac{3}{5}$



Semie Freezen, Different Ways



Learn 1 Equivalent fractions

Fractions that name the same amount are called equivalent fractions.

Problem

Bassem and Mina each had 1 liter of juice.

Bassem drank $\frac{1}{2}$ of his liter.

Mina drank $\frac{3}{6}$ of his liter.





Did Bassem and Mina drink the same amount?

What Bassem drank





What Mina drank





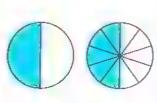
 $\frac{1}{2}$ and $\frac{3}{6}$ show the same amount.

So, Bassem and Mina drank the same amount.

 $\frac{1}{2}$ and $\frac{3}{6}$ are equivalent fractions

$$\frac{1}{2} = \frac{3}{6}$$

Examples for equivalent fractions





$$\frac{1}{2}=\frac{5}{10}$$

$$\frac{3}{4} = \frac{6}{8}$$

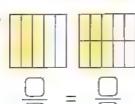
$$\frac{4}{5} = \frac{8}{10}$$

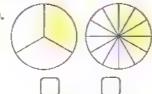
Notes for parents:

• Ask your child to draw a model to compare $\frac{1}{3}$ and $\frac{2}{6}$.

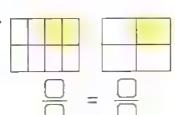
Example 1

Write the equivalent fractions for each.





C.



Solution 🕎



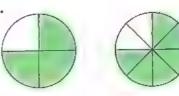
b. $\frac{1}{3} = \frac{4}{12}$

c. $\frac{2}{8} = \frac{1}{4}$

your understanding

1. Use the models to write the equivalent fractions.

a.







b.



10





12

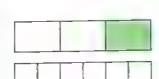
2. Color and write the equivalent fractions.

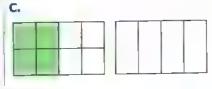
a.





8





⁻ Ask your child to draw models to show an equivalent fraction to $\frac{3}{4}$ -

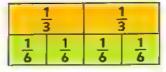
Learn 2 How can you model the same fraction in different ways?

Equivalent fractions name the same part of a whole or part of a set.

By using the fraction wall, here are some equivalent fractions.



	1/4			1/4		1/4			
1 12	1 12	1 12	1 12	1 12	1 12	1 12	112	1 12	



$$\frac{1}{5} = \frac{2}{10}$$
 $\frac{3}{4} = \frac{9}{12}$

$$\frac{3}{4} = \frac{9}{12}$$

$$\frac{2}{3} = \frac{4}{6}$$

More examples:

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \cdots$$

$$-\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \cdots$$

	1 2			1/2					
	<u>1</u> 3		3			<u>1</u> 3			
1/4		- 1	1		<u>1</u> 4		<u>1</u> 4		
1 5		1 5		5	1 5		1 5		
1/6	1/6		1/6	1/6		<u>1</u>	1/6		
1 7	1 7	1 7		7	7	17	7		
1 8	18	18	1 8	<u>1</u> 8	18	1/8	18		
1 9	1	9	1 5	7 9	9	1 9	1 9		
1 1 10 1	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$									
1 1 12 12	1 12	1 1 12 1	1 1 12	1 12 1	1 1 2 12	1 12	1 1 12 12		

Example 2

Use the fraction wall. Complete the equivalent fractions.

	1/2	
1/6	16	1/6

$$\frac{1}{2} = \frac{1}{6}$$

).	- 7	14	7	14	1/4		
	1 8	18	18	18	1 8	18	

$$\frac{3}{4} = \frac{3}{8}$$

$$\frac{2}{6} = \frac{2}{12}$$

Solution []



b. 6

c. 4

Example 3

Use the fraction wall. Write the missing numerator.

a.
$$\frac{1}{4} = \frac{1}{12}$$

b.
$$\frac{2}{5} = \frac{10}{10}$$

b.
$$\frac{2}{5} = \frac{10}{10}$$
 c. $\frac{2}{3} = \frac{9}{9}$ d. $\frac{6}{8} = \frac{4}{4}$

d.
$$\frac{6}{8} = \frac{4}{4}$$

Solution [🖤



Notes for parents:

• Ask your child to use fraction strips to write three equivalent fractions to $\frac{1}{3}$.

Example 4

By using the fraction wall, write one fraction or more equivalent to the following fractions.

a. $\frac{1}{3}$

b. 1

c. 2

Solution 🕎

a.
$$\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12}$$

b.
$$\frac{1}{4} = \frac{2}{8} = \frac{3}{12}$$

c.
$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12}$$



V

your understanding

1. Use the fraction wall to complete the following equivalent fractions.

$$\begin{array}{c|c} \frac{1}{2} \\ \frac{1}{4} & \frac{1}{4} \end{array}$$

$$\frac{1}{2}$$
 =

c.
$$\frac{1}{3}$$
 $\frac{1}{3}$ $\frac{1}{9}$ \frac

2. Use the fraction wall to complete.

a.
$$\frac{3}{4} = \frac{9}{8} = \frac{9}{8}$$

b.
$$\frac{2}{6} = \frac{4}{3} = \frac{3}{3}$$

[•] Ask your child how he/she show that $\frac{1}{6}$ and $\frac{2}{32}$ are equivalent fractions.

Some Fraction, Different Ways

on lesson 9

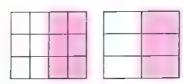




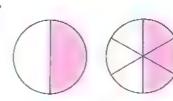


1. Write if the fractions are equivalent or not equivalent.

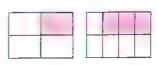
a.



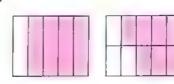
b.



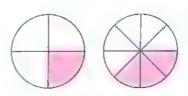
C.



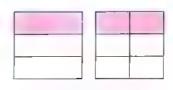
d.



e.

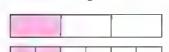


f.



2. Write the missing numerator or denominator.

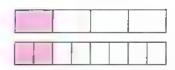
a. $\frac{1}{3} = \frac{1}{4}$



b.
$$\frac{2}{5} = \frac{10}{10}$$



c.
$$\frac{1}{4} = \frac{1}{8}$$



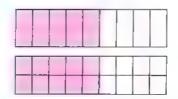
d.
$$\frac{1}{2} = \frac{4}{1}$$



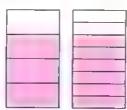
e.
$$\frac{3}{7} = \frac{6}{100}$$



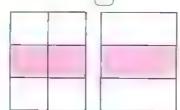
f.
$$\frac{5}{9} = \frac{10}{10}$$



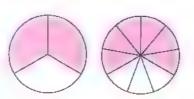
g.
$$\frac{3}{4} = \frac{3}{8}$$



h.
$$\frac{2}{6} = \frac{1}{6}$$



i.
$$\frac{2}{3} = \frac{1}{9}$$



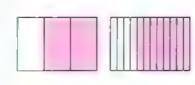
3. Complete to show the equivalent fraction.

a.



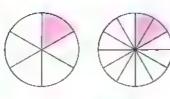
$$\frac{2}{5} = \frac{\Box}{\Box}$$

b.



$$\frac{2}{3} = \frac{\square}{\square}$$

C.



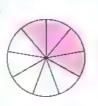
d.



e.



f.





4. Look at the fraction wall.

a. Write if each pair of fractions are equivalent or not.

(1)
$$\frac{2}{5}$$
 and $\frac{4}{10}$

[2]
$$\frac{5}{8}$$
 and $\frac{2}{3}$

(3)
$$\frac{4}{8}$$
 and $\frac{3}{6}$ —

[4]
$$\frac{5}{6}$$
 and $\frac{7}{8}$

(5)
$$\frac{1}{2}$$
 and $\frac{5}{10}$

(6)
$$\frac{2}{3}$$
 and $\frac{5}{6}$

b. \square Record two fractions that are equivalent to $\frac{1}{4}$.



	1										
	1 2				1/2						
	1/3							1 3			
1/4	-		<u>1</u> 4			1 4			1/4		
1 5		15		1 5	_		<u>1</u> 5		<u>1</u> 5		
1/6	1		1/6		1/6		1	5	1/6		
1 7	1 7		<u>1</u>	1 7	7	17		17	1 7		
1 8	18	1/8	1	3	18		1 8	1 8	1 8		
1 9	19	<u>1</u>	19	1 9		<u>1</u>	19	1 5	1 9		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								1 1			
1 1	1 11	111	11	1	1 1	1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 11	1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
1 1 1	1 1 12	1 12	1 12	<u>1</u>	1 12	1 12	1 12	1 12	1 1 12 12		

5. Use the fraction wall. Complete the equivalent fraction.

a.

3] }		1	
1/6	1 6	1/6	1/6	
	<u>2</u>	= [6	

b.

Ī	$\frac{1}{5}$ $\frac{1}{5}$		-	5	[1		
1 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 10	$ \begin{array}{c c c} $,	
			5	=	10				

C.

		1 2		
1 8	1/8	<u>1</u> 8	1/8	
		1/2	=-	8

d.

	1/4			1/4			$\frac{1}{4}$			
1 12	1 12	1 12	<u>1</u> 12	1 12	1 12	<u>1</u> 12	1 12	1 12		
				3	=	12				

Challenge

6. Samar has a recipe for healthy snack bars that she received from her friend. The recipe uses measuring cups and teaspoons. Her friend sent a ¹/₄ cup and ¹/₄ teaspoon, so Samar has to rewrite the recipe using equivalent fractions.



[Hint: Think about an equivalent fraction for $\frac{1}{2}$ using fourths.]

Healthy Snack Bars

Ingredients:

- $\frac{1}{2}$ cup rolled oats.
- 2 cups crispy rice cereal.
- $\frac{1}{4}$ cup honey.

- $1\frac{1}{2}$ cups peanut butter.
- $\frac{1}{2}$ teaspoon of vanilla.
- •1 cup chocolate chips.

Rewrite:

- cup rolled oats.
- c. cup crispy rice cereal.
- e. cup honey.

- **b.** cup peanut butter.
- d. teaspoon of vanilla.
- f. cup chocolate chips.

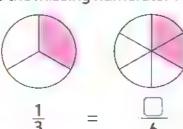
Choose the correct answer.

What is the missing numerator?



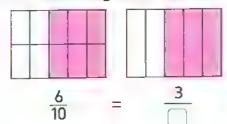
- A. 1
- **C.** 3
- D. 4

2. What is the missing numerator?



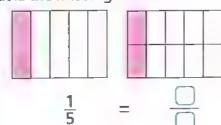
- A. 1
- **C.** 3
- D. 6

3. What is the missing denominator?



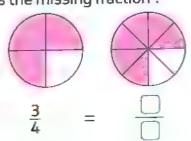
- A. 3
- C. 6
- **D**. 10

4. What is the missing fraction?

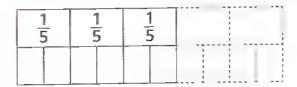


- B. $\frac{3}{10}$ C. $\frac{2}{10}$

5. What is the missing fraction?



6. What is the equivalent fraction to $\frac{3}{5}$?



- **A.** $\frac{3}{10}$ **B.** $\frac{4}{10}$ **C.** $\frac{5}{10}$

7. What is the equivalent fraction to $\frac{1}{6}$?



- A. 1 B. 2 C. 3 D. 4

8. What is the equivalent fraction to $\frac{1}{3}$?



- **A.** $\frac{2}{6}$ **B.** $\frac{4}{6}$ **C.** $\frac{2}{9}$ **D.** $\frac{6}{9}$

Lessons

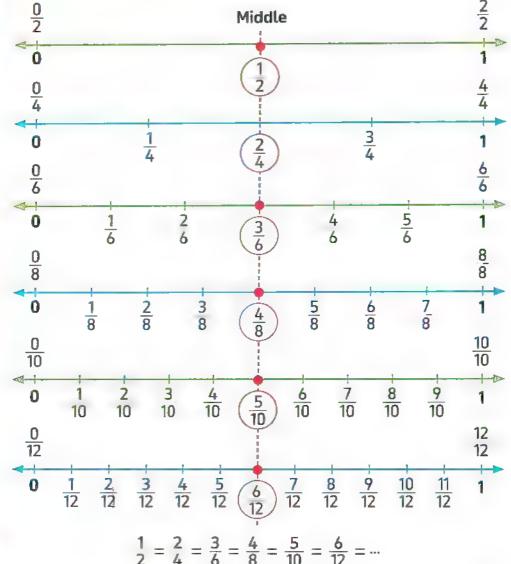
Benchmark Fractions

Applications on the Benchmark Fractions



Learn 1 **Benchmark fractions**

- Benchmark fractions are common fractions that you can use to judge and compare other fractions.
- 0, $\frac{1}{2}$ and 1 are benchmark fractions, the following number lines show the equivalent fractions to these benchmark fractions.



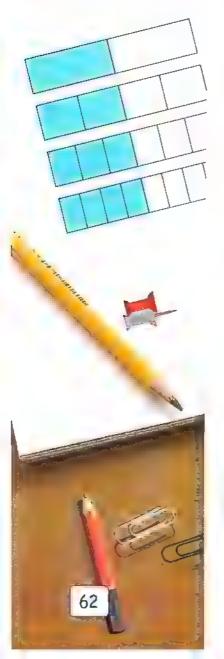
Note that:

In each fraction of $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, $\frac{5}{10}$ and $\frac{6}{12}$,... the numerator is equal to half the denominator.



Notes for parents:

• Ask your child to draw models to check that $\frac{1}{2} = \frac{2}{4} = \frac{3}{8} = \frac{4}{8} = \cdots$



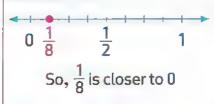
Example 1

Find benchmarks for $\frac{1}{8}$, $\frac{5}{8}$ and $\frac{7}{8}$

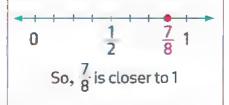
Locate each fraction on a number line. Decide if the fraction is closer to $0, \frac{1}{2}$ or 1

Solution [V]





0
$$\frac{1}{2}\frac{5}{8}$$
 1
So, $\frac{5}{8}$ is closer to $\frac{1}{2}$



Remarks

If the numerator is much less than half the denominator, the fraction is closer to 0

the denominator, the fraction is closer to

If the numerator is about half | If the numerator is much more than half the denominator, the fraction is closer to 1

For example:

- For $\frac{1}{8}$, $\frac{5}{8}$ and $\frac{7}{8}$, half of the denominator is 4
- For $\frac{1}{8}$, 1 is much less than 4. So, $\frac{1}{8}$ is closer to 0
- For $\frac{5}{8}$, 5 is about 4. So, $\frac{5}{8}$ is closer to $\frac{1}{2}$
- For $\frac{7}{8}$, 7 is much more than 4.50, $\frac{7}{8}$ is closer to 1

your understanding

1. Circle all fractions that are equivalent to $\frac{1}{2}$

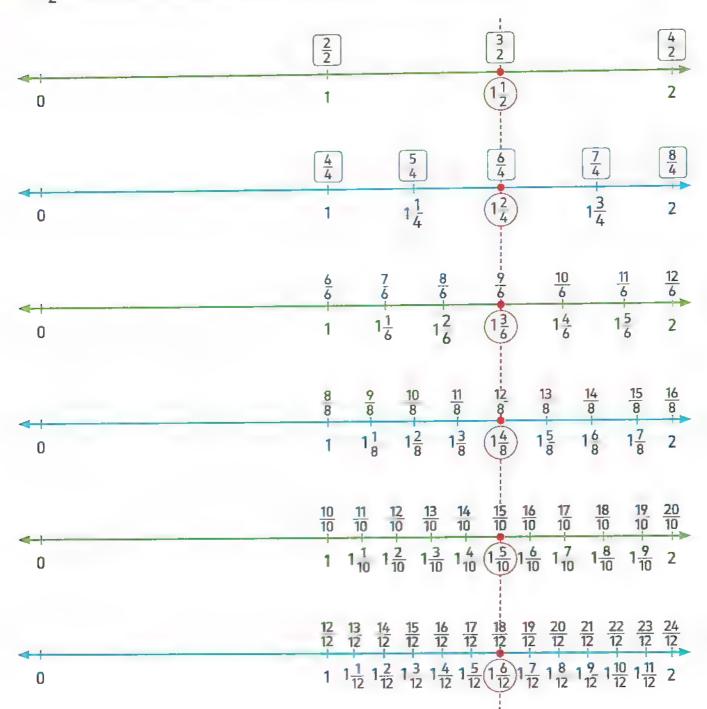
 $\frac{3}{4}$ $\frac{7}{12}$ $\frac{5}{10}$ $\frac{10}{20}$

2. Write whether the fraction is closer to $0, \frac{1}{2}$ or 1. Use the number line.

a. 8

More benchmark fractions

• $1\frac{1}{2}$ and 2 are also benchmark fractions you can use to compare fractions.



$$1\frac{1}{2} = 1\frac{2}{4} = 1\frac{3}{6} = 1\frac{4}{8} = 1\frac{5}{10} = 1\frac{6}{12} = \cdots$$

$$\frac{3}{2} = \frac{6}{4} = \frac{9}{6} = \frac{12}{8} = \frac{15}{10} = \frac{18}{12} = \cdots$$

Notes for parents:

• Ask your child to write equivalent fractions to the benchmark fraction $1\frac{1}{2}$

Example 2

Draw a line to match each fraction to its equivalent benchmark fraction.

You may match a fraction to more than an equivalent fraction.











10 10





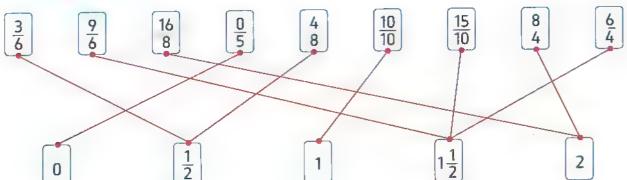






Solution 🚺







your understanding

Write an equivalent fraction to each benchmark fraction.

a.
$$\frac{1}{2} = ---$$

e.
$$1\frac{1}{2} = -$$

[•] Ask your child how he/she can find an equivalent fraction to $1\frac{1}{2}$

Learn 2 Comparing fractions using benchmark fractions

You can decide if a fraction is greater or less than a benchmark fraction (one half or one whole) and use this to compare two fractions indirectly.

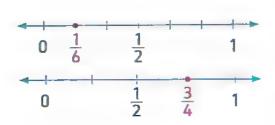
Example 3 -

Compare $\frac{3}{4}$ and $\frac{1}{6}$ using benchmark fractions.

Solution [V]

 $\frac{1}{6}$ < $\frac{1}{2}$ because 1 is less than half of 6. $\frac{3}{4} > \frac{1}{2}$ because 3 is greater than half of 4.

So,
$$\frac{3}{4} > \frac{1}{6}$$



Remarks

- 1. Any proper fraction is smaller than 1, for example: $\frac{2}{3} < 1$
- 2. Any improper fraction is greater than or equal to 1, for example: $\frac{7}{4} > 1$
- 3. Any improper fraction is greater than any proper fraction, for example: $\frac{11}{5} > \frac{5}{6}$

Example 4

Use benchmark fractions to compare. Write "<, > or =".

a.
$$\frac{3}{4}$$

b.
$$\frac{4}{10}$$

d.
$$\frac{7}{6}$$

d.
$$\frac{7}{6}$$
 $\frac{5}{7}$

b.
$$\frac{4}{10}$$
 $\frac{5}{6}$
e. $\frac{6}{12}$ $\frac{4}{8}$

Solution [

a.
$$\frac{3}{6} = \frac{1}{2}$$

$$\frac{4}{12} < \frac{1}{2}$$
 because 4 is less than half of 12

So,
$$\frac{3}{6} > \frac{4}{12}$$

b.
$$\frac{4}{10} < \frac{1}{2}$$
 because 4 is less than half of 10

$$\frac{5}{6} > \frac{1}{2}$$
 because 5 is greater than half of 6

So,
$$\frac{4}{10} < \frac{5}{6}$$

Notes for parents:

 Remind your child how he/she compare two fractions having the same numerator. Let him/her compare only. the denominators.

- c. $\frac{11}{12} > \frac{1}{2}$ and $\frac{4}{9} < \frac{1}{2}$
 - So, $\frac{11}{12} \ge \frac{4}{9}$
- e. $\frac{6}{12} = \frac{1}{2}$ and $\frac{4}{8} = \frac{1}{2}$
 - So, $\frac{6}{12} = \frac{4}{9}$

- d. $\frac{7}{6} > 1$ because it is an improper fraction.
 - $\frac{5}{7}$ < 1 because it is a proper fraction.
 - So, $\frac{7}{6} \ge \frac{5}{7}$
- f. 1 < 8

because $\frac{8}{5}$ is an improper fraction.

Example 5

Use the benchmark fractions $0, \frac{1}{2}$ and 1 to order the fractions $\frac{7}{8}, \frac{5}{10}, \frac{2}{6}$ in an ascending order.

Solution W



$$\frac{5}{10}=\frac{1}{2}$$

So, the order is:
$$\frac{2}{6}$$
, $\frac{5}{10}$, $\frac{7}{8}$

Example 6

Bassem and Andy were eating same-sized sandwich. Bassem's sandwich was cut into 6 equal parts and Andy's sandwich was cut into 4 equal parts. Each of them ate 3 parts of his sandwich.

Who ate the most?

Solution [V]

- Bassem ate = $\frac{3}{4}$ and Andy ate = $\frac{3}{4}$
- $\frac{3}{4} = \frac{1}{2}$ and $\frac{3}{4} > \frac{1}{2}$

Then, $\frac{3}{4} > \frac{3}{4}$



So, Andy ate the most.

your understanding

- 1. Use benchmark fractions to compare. Write "< , > or =".
 - a. $\frac{7}{18}$ $\frac{3}{4}$

- **b.** $\frac{10}{20}$ $\frac{9}{16}$

d. $\frac{3}{7}$ $\frac{6}{5}$

- 2. Put the fractions $\frac{4}{6}$, $\frac{5}{12}$, $\frac{4}{8}$ in a descending order.
- 3. Mazen jogged for $\frac{2}{4}$ hour. He swam for $\frac{5}{6}$ hour. Which activity took longer? Explain.
- Remind your child that any improper fraction is greater than any proper fraction, because any improper fraction is greater than or equal to 1 but any proper fraction is smaller than 1.
- Help your child use benchmark fractions to compare $\frac{7}{18}$ and $\frac{3}{4}$



on lessons 10&1

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- REMEMBER
- : IRS (
- CMIN
- ROBLEM SOLVING
- From the school book

First: Problems on benchmark fractions

- 1. Write whether the fraction is closer to 0, $\frac{1}{2}$, or 1.
 - a. Use the number line.

3

78 — —

1/8

5 8 —

b. Use the number line.

10 12 5 12

0

2 2



2. Locate each fraction on the number line, then decide whether the fraction is closer to zero, half or one, then check the suitable box.

Fraction	, Number line	0	1 2	1
2/4	0 1			
1/6	0 1			
78	0 . 1			
<u>4</u> 10	0 1			

- 3. Draw a line between each fraction and its equivalent benchmark fraction.
- (Some benchmark fractions can be connected to more than one fraction)

0

 $\frac{1}{2}$

1

 $\left(\frac{1}{2}\right)$

2

2

0 3

<u>6</u> 4 8 4

9 18

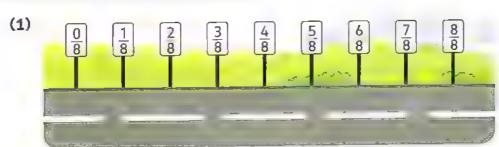
777

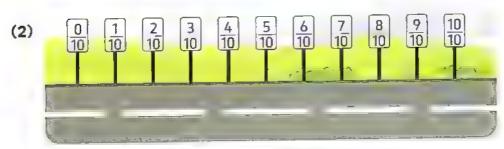
15 10 6 3

1<u>4</u> 7

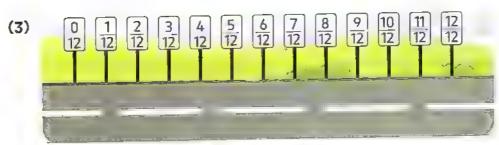
- 4. Sherif was in charge of placing benches along 1 kilometer walking path in Cairo.

 He was supposed to put the benches at the beginning, middle, and end of the path.
 - a. At what kilometer marker posts should Sherif put benches? Draw benches in the appropriate spots along the path.





• Complete: $\frac{2}{10}$ is closer to the benchmark fraction

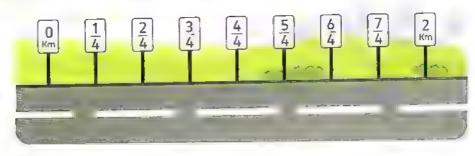


• Complete: a. $\frac{8}{12}$ is closer to the benchmark fraction

b. $\frac{11}{12}$ is closer to the benchmark fraction —

b: For Sherif's next job, the path is 2-kilometers long. He must place a bench every $\frac{1}{2}$ kilometer from the beginning to end. Where should he place them?

Draw benches in the appropriate spots along the path.



Second: Problems on comparing fractions using benchmark fractions

- Use benchmarks to compare. Complete the answer of each problem.
 - a. Compare $\frac{3}{4}$ and $\frac{2}{6}$

Because $\frac{3}{4}$ $\frac{1}{2}$, and $\frac{1}{2}$ $\frac{2}{6}$

So, $\frac{3}{4}$ $\frac{2}{4}$

b. Compare $\frac{6}{8}$ and $\frac{11}{9}$

Because $\frac{6}{8}$ 1, and 1 $\frac{11}{9}$

So, $\frac{6}{8}$ $\frac{11}{9}$

c. Compare $\frac{9}{7}$ and $\frac{5}{4}$

Because $\frac{9}{7}$ 1, and 1 $\frac{5}{6}$

So, 7 5

d. Compare $\frac{7}{12}$ and $\frac{6}{14}$

Because $\frac{7}{12}$ $\frac{1}{2}$, and $\frac{1}{2}$ $\frac{6}{14}$

So, $\frac{7}{12}$ $\frac{6}{14}$

Compare. Write "< , > or =".

d. $\frac{5}{10}$ $\frac{2}{6}$

g. $\frac{3}{4}$ $\frac{3}{10}$

b. $\frac{7}{8}$ $\frac{1}{2}$

e. $\frac{4}{8}$ 6

h. $\frac{5}{6}$ $\frac{5}{12}$

k. $\frac{6}{14}$ $\frac{7}{10}$

f. $\frac{10}{20}$ $\frac{11}{18}$

i. $\frac{5}{6}$ $\frac{3}{10}$

3. Use the benchmark fractions 0, $\frac{1}{2}$ and 1 to order each group of the fractions. a. $\frac{3}{6}$, $\frac{6}{8}$, $\frac{2}{10}$ [From the least to the g

[From the least to the greatest]

b. $\frac{5}{10}$, $\frac{2}{4}$, $\frac{7}{12}$

[From the least to the greatest]

c. $\frac{1}{4}$, $\frac{9}{9}$, $\frac{5}{4}$

(From the greatest to the least)

d. $\frac{10}{11}$, $\frac{5}{5}$, $\frac{10}{20}$

(From the greatest to the least)

4. a. Circle the fraction which is closer to $\frac{1}{2}$, but not greater than it.

 $\frac{8}{12}$, $\frac{2}{5}$

b. Circle the fraction which is closer to $\frac{1}{2}$, but not equal to $\frac{1}{2}$

 $\frac{2}{4}$, $\frac{7}{16}$

Story Problems

- Use a Benchmark For her birthday party, Menna made two cakes because she had so many friends coming. The two cakes were the same size. Her mom cut one cake into 10 pieces and the other into 6 pieces. $\frac{5}{10}$ of one cake was eaten and $\frac{5}{6}$ of the other cake was eaten. Which cake had more eaten? Use benchmark fractions to solve the problem.
- 2. Rashad and Malek each got a candy bar that was the same size. Rashed ate $\frac{4}{6}$ of his candy bar and Malek ate $\frac{4}{8}$ of his. Who ate more than $\frac{1}{2}$? How do you know?
- Mariam and Jana each had identical sandwiches.

 Mariam cut her sandwich into 12 pieces and ate 4 of them. Jana cut hers into 6 pieces and ate 3. Who ate more? How do you know?



Sandwich wrap

- 4. At basketball practice, Hatem made 14 of his 18 shots. His best friend, Amir made 8 of his 16 shots. Who made a larger fraction of the shots taken?
- Mazen and Ezz each had a candy bar. They each ate $\frac{1}{2}$ of the bar, but Mazen ate more candy than Ezz. How is this possible? Use a model to explain your thinking.

Challenge

- 6. Which of the following makes this true? Use benchmark fractions.
- *

$$\frac{3}{4} > \frac{3}{10}$$

- A. 4
- B. 8

C. 9

D. 10

Multiple Choice Questions

Choose the correct answer.

1. The fraction $\frac{5}{8}$ is nearest to the benchmark

[El-Menia 23]

A. $\frac{1}{2}$

B. $1\frac{1}{2}$

C. 1

D. 0

- 2. 12 is closer to the benchmark [Ismailia 23, El-Menia 23]
 - A. 1

B. 1

C. 0

D. $\frac{1}{4}$

- 3. $\frac{8}{9}$ is closer to the benchmark

[Kafr El-Sheikh 23]

A. 2

C. 0

- B. 1
- D. $\frac{1}{2}$

- $\frac{7}{12} \bigcirc \frac{10}{10}$

B. <

- C. =
- Which of the following fractions is equal to $\frac{1}{2}$?

B. 5

- 6. Which of the following fractions is greater than $\frac{1}{2}$?
 - A. $\frac{2}{4}$

B. $\frac{2}{6}$

- 7. Which of the following fractions is less than $\frac{1}{2}$?
 - A. $\frac{3}{3}$

- 8. Which of the following fractions is
 - closer to 1?
 - **A.** $\frac{1}{7}$

B. $\frac{2}{11}$

- 9. Which of the following fractions is greater than 1?

- 10. Which of the following fractions is the greatest?
 - A. 10

B. $\frac{8}{7}$

- 11. Which of the following shows the fractions ordered from the greatest to the least?
 - A. $\frac{6}{12}$, $\frac{5}{6}$, $\frac{3}{10}$
 - c. $\frac{3}{10}$, $\frac{6}{12}$, $\frac{5}{6}$

- B. $\frac{5}{6}$, $\frac{6}{12}$, $\frac{3}{10}$
- D. $\frac{6}{12}$, $\frac{3}{10}$, $\frac{5}{6}$

Concept Multiplication and Fractions Did you know ?! Believe it or fot Koalas cat sleeb के हर दें के अवविष् How many hours do they sleep in a day Students will use the identity property of multiplication to create Equivalent Fractions Using Lessons equivalent fractions. the Identity Property. 12 to 14 Students will multiply and divide to create equivalent fractions. Equivalent Fractions Using Multiplication and Division. Students will explain the relationship between multiples and Find the Missing in equivalent fractions. Equivalent Fractions. Students will multiply a fraction by a whole number. Multiplying by a Whole Lesson 15



- Leuteniers Francisco Using the launtity Property
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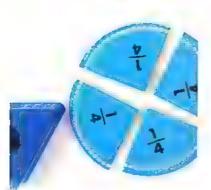
Learn 1

Equivalent fractions using the identity property

Property:

When you multiply any number by 1, the product is equal to that number.

- This property is called identity property of multiplication.
- 1 is called the multiplicative identity element.



For example:

$$\frac{1}{2} \times 1 = \frac{1}{2}$$

$$\bullet$$
 1 × 3,205 = 3,205

• 1 ×
$$\frac{5}{8}$$
 = $\frac{5}{8}$

You can use this property to find equivalent fractions as follows:



$$\frac{1}{2} \times 1 = \frac{1}{2}$$

You can write 1 as a fraction.

$$1 = \frac{2}{2}$$

Then,
$$\frac{1}{2} \times \frac{2}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$



Remember

Equivalent fractions are fractions have the same value, even though they may look different.



So,
$$\frac{1}{2} = \frac{2}{4}$$



So, $\frac{1}{2} = \frac{2}{4}$ \Rightarrow $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions.

Notes for parents:

· Remind your child that 1 is the identity element in multiplication operation. Let him/her use the property to find equivalent fractions.

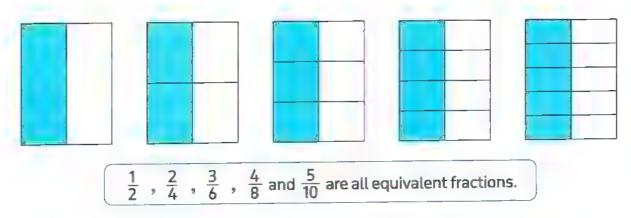
Different numbers, same value (Many missing multiples)

There are many ways to write 1 as a fraction.
 In every case, the numerator and denominator are the same.

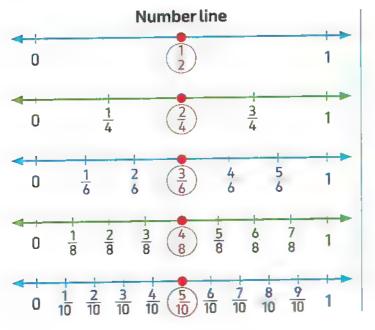
$$1 = \frac{2}{2} = \frac{3}{3} = \frac{4}{4} = \frac{5}{5} = \cdots$$

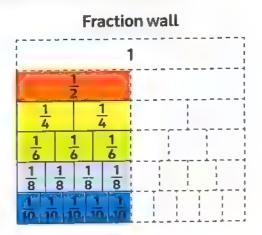
So,
$$\frac{1}{2} = \frac{1}{2} \times \frac{2}{2} = \frac{1}{2} \times \frac{3}{3} = \frac{1}{2} \times \frac{4}{4} = \frac{1}{2} \times \frac{5}{5} = \cdots$$

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10} = \cdots$$



You can use a number line and a fraction wall to show the equivalent fractions.





$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10}$$

Your child can use multiply by 1 to find more equivalent fractions.



How can you find equivalent fractions using multiplication or division?

- You can multiply both the numerator and denominator of a fraction by any number except zero to find equivalent fractions.
- If the numerator and denominator have a common factor, you can also divide both by that factor to find an equivalent fraction.

Example 1

Find two fractions that are equivalent to 4

Solution 🕎



One Way Use multiplication

Multiply both the numerator and denominator by the same non zero number.

The number 2 is easy to use, so multiply the numerator and denominator by 2.

$$\frac{4}{8} = \frac{4 \times 2}{8 \times 2} = \frac{8}{16}$$

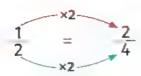
Another Way Use division

Divide both the numerator and denominator by the same non zero number. The number 4 is a common factor, so divide the numerator and denominator by 4.

$$\frac{4}{8} = \frac{4 \div 4}{8 \div 4} = \frac{1}{2}$$

So, $\frac{4}{8}$, $\frac{8}{16}$ and $\frac{1}{2}$ are all equivalent fractions.

More examples:



$$\frac{2}{5} = \frac{6}{15}$$

$$\frac{8}{12} = 2$$

$$\frac{2}{3}$$

$$\frac{6}{10} = \frac{3}{5}$$

your understanding

Complete to find equivalent fractions.

a.

b.

C.

d.

Notes for parents:

• Give your child a fraction as $\frac{8}{12}$, ask him/her to find equivalent fractions, once by multiplication and another by division.



How to find the missing numerator or denominator in equivalent fractions?

To find the missing numerator, decide if the denominator is multiplied or divided by a number, then do the same with numerator.

Example 2

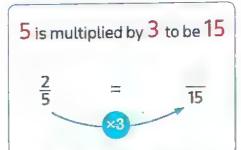
Find the missing numerator or denominator.

a.
$$\frac{2}{5} = \frac{2}{15}$$

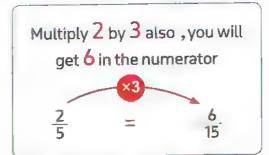
b. $\frac{8}{12} = \frac{4}{12}$



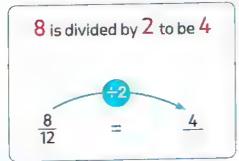
a.

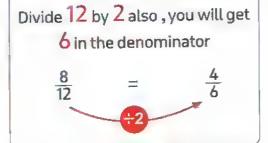


>



b.





your understanding

Complete.

a.
$$\frac{2}{3} = \frac{1}{9}$$

b.
$$\frac{4}{6} = \frac{12}{}$$

c.
$$\frac{3}{6} = \frac{}{2}$$

d.
$$\frac{2}{7} = \frac{14}{14}$$

e.
$$\frac{8}{10} = \frac{4}{10}$$

f.
$$\frac{10}{6} = \frac{10}{12}$$

[•] Ask your child how he/she find the missing numerator in $(\frac{1}{5} = \frac{?}{10})$ and how he/she find the missing denominator in $(\frac{12}{15} = \frac{4}{?})$.

Amgad has 12 marbles. $\frac{2}{3}$ of them are red.

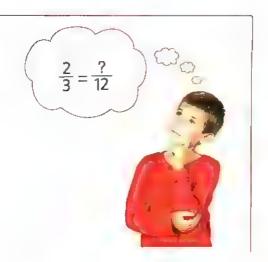
What is the number of red marbles does Amgad have?

Solution 🕎



$$\frac{2}{3} = \frac{8}{12}$$

The number of red marbles is 8 marbles.





√ your understanding

Mai baked 24 pieces of cake. If $\frac{3}{4}$ of them are with chocolate cake.

What is the number of chocolate cake she baked?

Emrich your knowledge

Simplest form

▶ A fraction is in **simplest form** when 1 is the only number that divides both the numerator and the denominator with no remainder.

These fractions are in simplest form.

$$\frac{1}{2}$$
 $\frac{2}{3}$ $\frac{3}{8}$ $\frac{2}{7}$ $\frac{5}{9}$

These fractions are not in simplest form.

$$\frac{2}{4}$$
 $\frac{4}{8}$ $\frac{3}{15}$ $\frac{6}{9}$ $\frac{8}{12}$

Bassem and Marwan both used equivalent fractions to write $\frac{12}{18}$ in simplest form.

Could Bassem have divided by 3 first?

$$\frac{12}{18} = \frac{12 \div 2}{18 \div 2} = \frac{6}{9}$$

$$\frac{6}{9} = \frac{6 \div 3}{9 \div 3} = \frac{2}{3}$$

 $\frac{2}{3}$ is in simplest form.

6 is the greatest common factor between 12 and 18

 $\frac{2}{3}$ is in simplest form because 1 is the only number

that can divide both 2 and 3 with no remainder.

Notes for parents:

Ask your child to read the story problem carefully, then plane and solve.

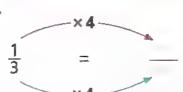
Equivalent Processes Using the Island by Property.

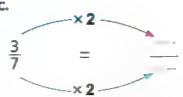
- Kampuse Francisco (Englishmann prof Division
- Find the Missing in Equivalent Fractions

- 🖧 PROBLEM SOLVING
- From the school book

1. Complete to find an equivalent fraction.







d.

$$\frac{3}{6} = \frac{1}{13}$$

e.

f.

2. Complete.

a.
$$\frac{2}{3} \times \frac{4}{4} =$$

a.
$$\frac{5}{2}$$

g.
$$\frac{5}{8} \times \frac{15}{3} = \frac{15}{24}$$

[Giza 22]

b.
$$\frac{3}{4} \times \frac{2}{2} =$$
 c. $\frac{6}{7} \times \frac{3}{3} =$ [El-Monofia - Ashmon 22]

e.
$$\frac{7}{9} \times \frac{8}{8} = -----$$

h.
$$\frac{4}{7} \times - \frac{16}{28}$$

[Cairo -El Sayda Zainab 22]

c.
$$\frac{6}{7} \times \frac{3}{3} = -$$

3. Find an equivalent fraction to each.

a.
$$\frac{1}{6} = -$$

a.
$$\frac{1}{6} = \frac{1}{10} = \frac{1}{$$

c.
$$\frac{4}{12} = ---$$

d.
$$\frac{2}{10} = ----$$

e.
$$\frac{10}{15} = \frac{10}{15} = \frac{4}{4} = \frac{10}{15} = \frac{20}{25} = \frac{10}{15} = \frac{7}{8} = \frac{7}{8} = \frac{7}{8} = \frac{7}{15} = \frac{7}{$$

f.
$$\frac{4}{6} = ----$$

g.
$$\frac{20}{25} = -$$

h.
$$\frac{7}{8} = ---$$

4. Write three equivalent fractions to each.

a.
$$\frac{2}{5} = \frac{-}{-} = \frac{-}{-} = \frac{-}{-}$$

b.
$$\frac{4}{12} = \frac{}{} = \frac{}{} = \frac{}{}$$

c.
$$\frac{4}{6} = \frac{}{} = \frac{}{} = \frac{}{}$$

d.
$$\frac{4}{10} = \frac{-}{-} = \frac{-}{-} = \frac{-}{-}$$

e.
$$\frac{3}{9} = \frac{-}{-} = \frac{-}{-}$$

f.
$$\frac{4}{20} = \frac{}{} = \frac{}{} = \frac{}{} = \frac{}{}$$

5. Generate at least 5 equivalent fractions for each fraction.

a. $\frac{2}{3}$;;;

b. — ; $\frac{2}{4}$; — ; — ; — ;

 $c, \frac{3}{5};$ -; ---; ----; -----;

d. $-; \frac{3}{9}; -; --;$

6. Determine whether each fraction pair is equivalent. If it is, write "true." If it is not, write "false."

a. $\implies \frac{2}{3} = \frac{6}{9}$ **b.** $\frac{15}{25} = \frac{4}{5}$ **c.** $\implies \frac{7}{8} = \frac{2}{3}$

g. $= \frac{2}{8} = \frac{1}{4}$ i. $= \frac{3}{8} = \frac{1}{6}$

7. Find the missing numerator or denominator to make the fractions equivalent. Record what factor you multiplied or divided by.

a. $\frac{5}{9} = \frac{5}{27}$ (Ismailia 23) **b.** $\frac{2}{5} = \frac{5}{25}$ (Giza 23) **c.** $\frac{5}{8} = \frac{16}{16}$

d. $\frac{3}{4} = \frac{3}{12}$ e. $\frac{20}{25} = \frac{5}{5}$ f. $\frac{5}{7} = \frac{5}{21}$

j. $\frac{12}{18} = \frac{4}{18}$ k. $\frac{4}{7} = \frac{28}{28}$ [El-Monofia 23] l. $\frac{3}{18} = \frac{3}{6}$ [Giza 23]

[Assiut 23, El-Monofia 23]

m. $\frac{7}{13} = \frac{21}{5}$ n. $\frac{12}{20} = \frac{12}{5}$ [Cairo - Middle 22] o. $\frac{8}{10} = \frac{12}{5}$ [Souhag 23]

p. $\frac{2}{3} = \frac{10}{9}$ q. $\frac{2}{3} = \frac{10}{9}$ [Port Said 23] r. $\frac{3}{5} = \frac{10}{9}$ [Giza 23]

[El-Monofia 23, El-Menia 23]

5. $\frac{2}{3} = \frac{18}{18}$ [El-Beheira 23]

t. $\frac{8}{10} = \frac{4}{10}$ [Kafr El-Sheikh 23]

8. Find the value of X.

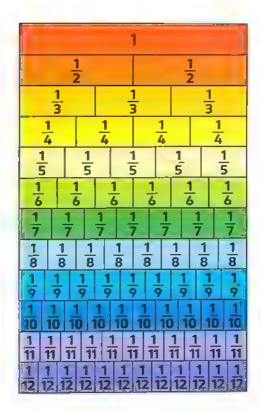
a. $\frac{9}{12} = \frac{X}{4}$ b. $\frac{18}{27} = \frac{2}{X}$ c. $\frac{X}{5} = \frac{15}{15}$ d. $\frac{X}{4} = \frac{2}{8}$ f. $\frac{X}{42} = \frac{1}{7}$

- 9. 🕮 Use the fraction wall to answer the questions.
 - a. How many halves are in 1 whole?

 Using halves, how would you write 1 whole as a fraction?
 - b. How many fourths are in 1 whole?

 Use fourths, how would you write 1 whole as a fraction?
 - c. How many tenths are in 1 whole?

 Use tenths, how would you write 1 whole as a fraction?
 - d. Explain the pattern and why each of the fractions you wrote equals 1 whole?



- e. Using what you know, how many 25ths are in 1 whole?
- 10. Nabil had 9 cookies. $\frac{2}{3}$ of them were chocolate chip. How many cookies were chocolate chip?

[Hint: $\frac{2}{3} = \frac{?}{9}$]

(Suez - South 22)



11. Ahmed has 15 cakes. If $\frac{3}{5}$ of them are covered with chocolate. How many chocolate cakes are there?

[Kafr El-Sheikh 23, Cairo 22]

12. Youssef has 18 apples. Two third of the apples are red. [Cairo 23] How many apples are red?



13. Sally's team won 10 of 15 games. Fatma's team played 6 games and won the same fraction of their games as Sally's. How many games did Fatma's team win? Explain your thinking.



14. Theba has two cakes that were the same size. She cut the first cake into 6 pieces and frosted 2 of the pieces with chocolate. She cut the second cake into 18 pieces. If she wanted to frost the same fraction of the second cake with chocolate, how many pieces should she frost? How do you know? Draw a fraction model if necessary.



15. Comar's Om Ali. Omar made a pan of Om Ali, his favorite dessert. The pan contains 12 equal servings. Omar shares 3 servings with his friend Heba. What is the simplest form of the fraction of the Om Ali Omar gave his friend?



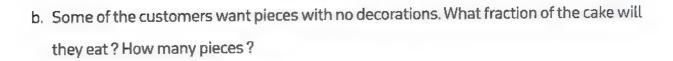
16. Nadia's cake. Nadia owns a bakery. She made a cake and decorated it as shown.

There are 12 equal pieces total:

6 pieces have flowers, 4 are plain with no decorations and the other 2 have something else.

Answer the questions based on Nadia's cake.

a. Some of the customers want pieces with flowers.
What fraction of the cake will they eat? How many pieces?



c. What fraction of the cake is left?

d. If Nadia cuts all the pieces that are left into two, what fraction is left now?

Challenge

17. I am a fraction. Each of $\frac{6}{18}$ and $\frac{10}{30}$ is equivalent to me.

Each of my numerator and my denominator is less than 5. Who am I?





Choose the correct answer.

1.
$$\frac{1}{3} = \frac{1}{9}$$

[Giza 23]

$$\frac{5}{8} = \frac{5}{16}$$

[Alex. 23]

B. 7

A. 5

B. 10

D. 4

D. 13

3.
$$\frac{2}{3} = \frac{1}{9}$$

[Kafr El-Sheikh 23]

4. $\frac{3}{4} = \frac{1}{8}$

(Et-Beheira 23)

B. 9

A. 2

B. 4

D. 6

D. 8

5. Which number fits in the blank?

$$\frac{2}{3} = \frac{18}{1}$$

[Giza - 6th october 22]

A. 6

B. 9

C. 19

D. 27

6. The fraction $\frac{5}{6}$ is equivalent to

(El-Monofia 23)

A.
$$\frac{10}{6}$$

C.
$$\frac{25}{30}$$

D.
$$\frac{5}{12}$$

7. The fraction $\frac{1}{2}$ is equivalent to

(El-Beheira 23)

A.
$$\frac{1}{3}$$
 C. $\frac{2}{5}$

B.
$$\frac{3}{6}$$

8. Which fraction is Not equivalent to $\frac{3}{9}$?

Which of the following statement is NOT

(Giza 22)

B.
$$\frac{5}{15}$$

C.
$$\frac{2}{6}$$

true?

D.
$$\frac{1}{3}$$

9. Which of the following is true?

[Kafr El-Sheikh 23]

A.
$$\frac{5}{15} = \frac{1}{3}$$

B.
$$\frac{1}{16} = \frac{3}{18}$$

A.
$$\frac{5}{15} = \frac{1}{3}$$

B.
$$\frac{1}{6} = \frac{3}{18}$$

C.
$$\frac{7}{8} = \frac{8}{7}$$
 D. $\frac{3}{13} = \frac{4}{4}$

C.
$$\frac{7}{8} = \frac{8}{7}$$

D.
$$\frac{3}{3} = \frac{4}{4}$$

11. Which of the following shows the identity property of multiplication?

C. $\frac{4}{5} \times \frac{5}{4}$

B.
$$\frac{2}{3} \times 1$$

D.
$$\frac{5}{7} + 0$$

12. What is the product of
$$\frac{3}{5} \times \frac{3}{3}$$
?

A.
$$\frac{3}{5}$$

B.
$$\frac{6}{8}$$

D,
$$\frac{9}{5}$$



Multiplying by a Whole



Learn

How to multiply a fraction by a whole number?



Remember

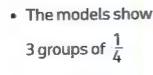
Multiplication is a repeated addition.

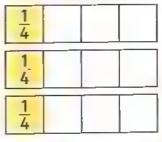
For example: $3 \times 4 = 3 + 3 + 3 + 3 = 12$

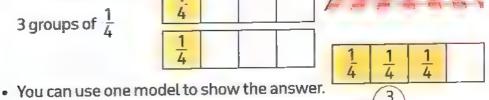
Problem

Eman drinks $\frac{1}{4}$ bottle of milk every day.

How much milk does she drink in 3 days?







• Also, you can use repeated addition: $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$ or you can use multiplication: $3 \times \frac{1}{4} = \frac{3}{4}$

Note that
•
$$3 \times \frac{1}{4} \neq 3\frac{1}{4}$$
 but: $3 \times \frac{1}{4} = \frac{3}{4}$

$$-3 + \frac{1}{4} = 3\frac{1}{4}$$



85

Remain

When you multiply a proper fraction and a whole number (except 0 and 1), the product is less than the whole number factor, but greater than the fraction factor.

For example:

$$3 \times \frac{1}{4} = \frac{3}{4}$$

$$3 \times \frac{1}{4} = \frac{3}{4}$$
 $\left[\frac{3}{4} < 3, \text{ but: } \frac{3}{4} > \frac{1}{4}\right]$

Notes for parents:

- Explain that the properties of multiplication of whole numbers are applied to fractions.
- Remind your child that when we multiply a fraction and a whole number (except 0 and 1), the product is less than the whole number factor, but greater than the fraction factor. This is different from multiplying whole numbers because the product is always greater than either factor.

Draw a bar model and write an addition and multiplication sentence for each of the following fractions.

a.
$$\frac{3}{5}$$

b.
$$\frac{2}{7}$$

c.
$$\frac{4}{6}$$

Solution 🕎

		Model	Addition sentence	Multiplication sentence
a.	<u>3</u> 5		$\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$	$\frac{3}{5} = 3 \times \frac{1}{5}$
b.	2 7		$\frac{2}{7} = \frac{1}{7} + \frac{1}{7}$	$\frac{2}{7}=2\times\frac{1}{7}$
c.	4 6		$\frac{4}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$	$\frac{4}{6} = 4 \times \frac{1}{6}$

Example 2

Multiply

a.
$$5 \times \frac{1}{7} =$$

d.
$$\frac{3}{4} \times 2 =$$

b.
$$\frac{1}{3} \times 3 =$$

b.
$$\frac{1}{3} \times 3 =$$
 c. $10 \times \frac{1}{5} =$ e. $\frac{2}{9} \times 4 =$ f. $3 \times \frac{3}{5} =$

c.
$$10 \times \frac{1}{5} = -$$

f.
$$3 \times \frac{3}{5} =$$

Solution [9]

a.
$$5 \times \frac{1}{7} = \frac{5}{7}$$

c.
$$10 \times \frac{1}{5} = \frac{10}{5} = 2$$

e.
$$\frac{2}{9} \times 4 = \frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} = \frac{8}{9}$$
 f. $3 \times \frac{3}{5} = \frac{3}{5} + \frac{3}{5} + \frac{3}{5} = \frac{9}{5}$

b.
$$\frac{1}{3} \times 3 = \frac{3}{3} = 1$$

d.
$$\frac{3}{4} \times 2 = \frac{3}{4} + \frac{3}{4} = \frac{6}{4}$$

f.
$$3 \times \frac{3}{5} = \frac{3}{5} + \frac{3}{5} + \frac{3}{5} = \frac{9}{5}$$

Note that

• To evalute $\frac{2}{9}$ × 4 multiply the numerator of the fraction by the whole number as follows: $\frac{2}{9} \times 4 = \frac{2 \times 4}{9} = \frac{8}{9}$



More examples: $\frac{3}{4} \times 2 = \frac{3 \times 2}{4} = \frac{6}{4}$ and $3 \times \frac{3}{5} = \frac{3 \times 3}{5} = \frac{9}{5}$

Notes for parents:

 $\cdot \frac{2}{6} \times 2 = \frac{4}{6}$, this may be a bit more challenging, but the addition equation and a bar model may clarify.

Complete.

a.
$$\frac{3}{5} \times 2 =$$

b.
$$\frac{4}{10} \times 3 =$$

c.
$$\frac{2}{7} \times 3 =$$

Solution [*]

a.
$$\frac{6}{5}$$

c.
$$\frac{6}{7}$$

Example 4

At a birthday party, there were 5 children. If each child ate $\frac{2}{9}$ of a pizza, how many pizzas were eaten?

Solution [V



Number of pizzas =
$$\frac{2}{9} \times 5$$

$$=\frac{2}{9}+\frac{2}{9}+\frac{2}{9}+\frac{2}{9}+\frac{2}{9}=\frac{10}{9}$$
 pizzas.

Another way:

$$\frac{2}{9} \times 5 = \frac{2 \times 5}{9} = \frac{10}{9}$$
 pizzas

Example 5

Ahmed has 5 cakes, $\frac{3}{5}$ of them are chocolate. How many chocolate cake are there?

Solution [V

Number of chocolate cake = $\frac{3}{5} \times 5 = \frac{15}{5} = 3$ chocolate cakes.



your understanding

- 1. Draw a bar model and write an addition and multiplication sentence for $\frac{3}{8}$.
- 2. Multiply.

a.
$$\frac{1}{4} \times 5 = ---$$

b.
$$3 \times \frac{1}{9} = ----$$

c.
$$\frac{2}{5} \times 2 =$$

3. Eman has 10 cakes, $\frac{1}{5}$ of them are chocolate. How many chocolate cakes are there?

► Multiplying by a Whole

● REMEMBER ### DC TS D OASTEY &	PROBLEM SOLVING From the school book
. Color the bar model and write an addit the following fractions.	ion and multiplication sentence for each of
a. $\frac{2}{5}$ Addition sentence: Multiplication sentence:	b. $\frac{3}{7}$ Addition sentence: Multiplication sentence:
c. \square 5/8 Addition sentence: Multiplication sentence:	d. $\frac{4}{6}$ Addition sentence: Multiplication sentence:
write the fraction which represents the an addition and multiplication sentence	colored parts for each bar model and write for each fraction.
Fraction: Addition sentence: Multiplication sentence:	Fraction: Addition sentence: Multiplication sentence:
C.	d.
Fraction:	Fraction:
Addition sentence:	Addition contance:

Multiplication sentence:

Multiplication sentence:

3. Draw a bar model for each of the following sentence.

a.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

b.
$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

c.
$$4 \times \frac{1}{9}$$

d.
$$\frac{1}{3} \times 5$$

4. Complete each of the following.

a.
$$\frac{1}{8} \times 7 =$$

[Alex. 23]

b.
$$7 \times \frac{1}{9} =$$

[Kafr El-Sheikh 23]

c.
$$4 \times \frac{1}{9} = -$$

[El-Beheira 23] d.
$$8 \times \frac{1}{9} = \dots$$

e.
$$\frac{1}{4} \times 3 =$$

f.
$$4 \times \frac{1}{5} =$$

(El-Beheira 23)

g.
$$\frac{1}{3} \times 3 =$$

i.
$$3 \times \frac{2}{9} = 1$$

[El-Monofia 23]

5. Match.



a.
$$\frac{1}{5} + \frac{1}{5}$$

$$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$$

b.
$$5 \times \frac{1}{2}$$

$$c_1 = 5 \times \frac{1}{3}$$

3.
$$2 \times \frac{1}{5}$$

d.
$$2 \times \frac{1}{2}$$

4.
$$3 \times \frac{1}{5}$$

e.
$$\frac{1}{5} \times 3$$



6. Sally drinks $\frac{1}{5}$ of a carton of milk each day. How much milk does she drink in 4 days? Express your answer as a sum of unit fractions, and as an equivalent multiplication sentence. Draw a bar model if necessary.



7. If it takes $\frac{2}{6}$ of a bag of flour for a cookie recipe, how much flour will it take to double the recipe?



8. Khalid ate $\frac{1}{6}$ from the candy box, so if there were 24 pieces in the box, how many pieces did Khalid eat?



9. Sahar has 9 cakes, $\frac{2}{3}$ of them are chocolate. How many chocolate cakes are there?

[Alex. 23]



10. The day is 24 hours, how many hours are there in $\frac{1}{3}$ day?

[Giza 23]



Challenge

11. What do you notice about the factors and product when you multiply a proper fraction by a whole number? How is this different from multiplying a whole number by a whole number?

Choose the correct answer.

1. Which sentence represents the fraction of colored parts in the following bar model?



A.
$$6 \times \frac{1}{3}$$

B.
$$\frac{1}{3} \times 3$$

C.
$$3 + \frac{1}{6}$$

D.
$$3 \times \frac{1}{6}$$

2.
$$1 \times \frac{3}{7} =$$

3.
$$\frac{5}{6} \times 0 = -$$

A.
$$1\frac{3}{7}$$

B.
$$\frac{3}{7}$$

A.
$$\frac{5}{6}$$

4.
$$3 \times \frac{1}{7} = ------$$

5.
$$7 \times \frac{1}{10} = -$$

A.
$$3\frac{1}{7}$$

B.
$$\frac{31}{7}$$

A.
$$7\frac{1}{10}$$

c.
$$\frac{3}{7}$$

D.
$$\frac{1}{7}$$

c.
$$\frac{2}{10} + \frac{5}{10}$$

D.
$$\frac{7}{70}$$

6.
$$7 \times \frac{1}{4} =$$

7.
$$4 \times \frac{1}{5} =$$

B.
$$\frac{7}{28}$$

A.
$$\frac{1}{5}$$

B.
$$\frac{4}{5}$$

c.
$$\frac{1}{28}$$

D.
$$7\frac{1}{4}$$

c.
$$\frac{3}{7}$$

D.
$$\frac{5}{8}$$

8.
$$\frac{1}{4} \times 5 =$$

9.
$$\frac{1}{8} \times 5 = -$$

A.
$$\frac{5}{4}$$

A.
$$\frac{5}{8}$$

C.
$$\frac{1}{4}$$

D.
$$\frac{1}{5}$$

D.
$$\frac{5}{40}$$

10.
$$\frac{1}{6} + \frac{1}{6} =$$

A.
$$6 \times \frac{1}{2}$$

B.
$$2 \times \frac{1}{6}$$

D.
$$\frac{1}{2}$$

11.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$$

A.
$$\frac{4}{20}$$

B.
$$\frac{1}{5} \times 4$$

C.
$$\frac{11}{5}$$

D.
$$1\frac{1}{5}$$

Unit Nine Assessment



Choose the correct answer.

1.
$$\frac{3}{8} = \frac{1}{1}$$

A.
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$
 B. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ C. $\frac{2}{8} + 1$

B.
$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

c.
$$\frac{2}{8} + 1$$

D.
$$\frac{1}{8} + 2$$

2.
$$\frac{14}{3} =$$
 --- as a mixed number.
A. $4\frac{1}{3}$ B. $3\frac{2}{4}$

A.
$$4\frac{1}{3}$$

B.
$$3\frac{2}{4}$$

C.
$$4\frac{2}{3}$$

D.
$$2\frac{2}{3}$$

3.
$$\frac{3}{8}$$
 >

A.
$$\frac{3}{4}$$

B.
$$\frac{5}{8}$$

c.
$$1\frac{1}{8}$$

D.
$$\frac{1}{8}$$

B.
$$\frac{7}{9}$$

C.
$$\frac{2}{9}$$

5.
$$2\frac{3}{7} =$$

5. $2\frac{3}{7} =$ "as an improper fraction."

A.
$$\frac{17}{3}$$

B.
$$\frac{17}{7}$$

c.
$$\frac{14}{7}$$

D.
$$\frac{11}{7}$$

6.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$$

A.
$$\frac{4}{5}$$

B.
$$\frac{111}{5}$$

C.
$$3 \times \frac{1}{5}$$

D.
$$\frac{3}{15}$$

7.
$$\frac{7}{8} =$$

B.
$$\frac{14}{16}$$

C.
$$1\frac{7}{4}$$

D.
$$\frac{14}{24}$$

2 Complete.

1.
$$7\frac{3}{9}$$
 = $4\frac{1}{9}$

$$=4\frac{1}{9}$$

3.
$$-2\frac{1}{5} = 3\frac{3}{5}$$

5,
$$2 + \frac{1}{7} + 3 + \frac{3}{7} =$$

7.
$$5 \times \frac{1}{4} = \frac{3}{4} + \cdots$$

2.
$$\frac{5}{8} = \frac{1}{40}$$

4.
$$5\frac{1}{6} + 1\frac{4}{6} = -$$

6.
$$2-\frac{2}{9}=$$

8.
$$6\frac{1}{7} - 2\frac{3}{7} =$$

Choose the correct answer.

1.
$$\frac{5}{7} >$$

A.
$$\frac{7}{7}$$

B.
$$\frac{6}{7}$$

C.
$$\frac{1}{7}$$

- 2. Which fraction is equivalent to $\frac{4}{12}$?
 - **A.** $\frac{8}{20}$

B. $\frac{2}{9}$

C. $\frac{1}{4}$

- D. $\frac{3}{9}$
- 3. Sameh has 20 cakes. If $\frac{3}{5}$ of them are covered with chocolate, then the number of chocolate cakes = cakes.
 - A. 10

B. 13

C. 12

- **D**. 17
- 4. The bar model that represents the fraction of the colored parts of the multiplication sentence $2 \times \frac{1}{5}$ is _____
 - A. _____
- В.
- C.
- D.

- 5. $\frac{2}{3} = \frac{1}{9}$
 - **A**. 1

B. 4

C. 6

D. 8

- **6.** $\frac{3}{8}$ < ----
 - **A.** $\frac{3}{10}$

B. 3

 $c. \frac{3}{12}$

- **D.** $\frac{3}{7}$
- 7. Peter ate $\frac{4}{6}$ of his chocolate bar. The fraction of the remaind part is
 - **A.** $\frac{2}{3}$

B. $\frac{1}{6}$

- C. $\frac{4}{6}$
- **D**. $\frac{1}{3}$

Answer the following.

- 1. Sara is making pancake batter. The recipe calls for $\frac{7}{10}$ of a jug of milk, and she only has $\frac{2}{10}$ of a jug of milk. How much more milk does Sara need to make the pancake batter?
- 2. Arrange the following fractions from the greatest to the least.

$$\frac{7}{9}, \frac{4}{9}, \frac{9}{9}, \frac{1}{9}, \frac{5}{9}$$

- 3. Use the benchmark fractions 0, $\frac{1}{2}$ and 1 to order the following fractions from least to greatest. $\frac{3}{8}$, $\frac{7}{9}$, $\frac{5}{10}$
- 4. Hagar used $3\frac{4}{6}$ kg of meat. Amal used $2\frac{2}{6}$ kg of meat. What is the total amount of meat did they use altogether?

Decimals

- ➤ Concept 1 : Understanding Decimals
- ➤ Concept 2 :
 Decimals and Fractions
- ▶ Concept 3:

Fast Fact

Each goal in a football game consists of two upright posts | and joined at the top by a horizontal crossbar. The distance between the posts is 7.32 m and the distance from the lower edge of the crossbar to the ground | is 2.44 m.

Fractions, Decimals, and Porportional Relationships



Concept

Understanding Decimals



No.	eessoja/Viajaac	मुक्तानीन्छं शिविविद्यां अस्त		
Lessons	Let's Explore Decimals • Students will define decimal fractions. • Students will create visual models of Tenths.			
1&2	Hundredths	Students will create visual models of Hundredths.		
Lessons	The Place Value	 Students will name the place value of decimals to the Hundredths place. Students will identify the value of a digit to the Hundredths place. 		
3&4	Decimals in Different Forms	Students will write decimals to the Hundredths place in standard, word, unit, and expanded form.		

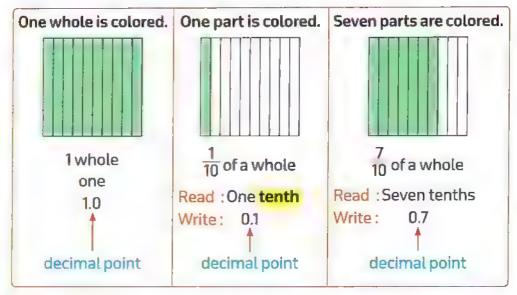


- Let's Explore Decimals
- Hundredths



Learn 1 **Exploring Tenths**

- One way to show parts of a whole is to use fractions. Another way is to use decimals.
- A decimal is a number with one or more digits to the right of the decimal point.
- Look at the models below. Each model has 10 equal parts:





For example:

Ahmed plays in a football school team.

He trains to kick penalties.

He scored 8 goals of 10 tries.



Model	Fraction	Decimal	
	Write: 8 10 Read: Eight tenths	Write: 0.8 Read: Eight tenths	

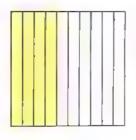
So, Ahmed scored $\frac{8}{10}$ or 0.8 of his tries.

Notes for parents:

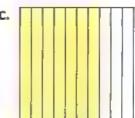
Explain that the fraction ⁷/₁₀ and the decimal 0.7 name the same amount.

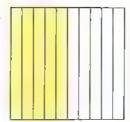


Write the fraction and decimal for the colored part.









Solution 🕎



a.
$$\frac{4}{10}$$
 , 0.4

b.
$$\frac{2}{10}$$
 , 0.2

c.
$$\frac{7}{10}$$
 , 0.7

a.
$$\frac{4}{10}$$
 , 0.4 **b.** $\frac{2}{10}$, 0.2 **c.** $\frac{7}{10}$, 0.7 **d.** $\frac{5}{10}$, 0.5

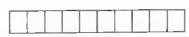
Example 2

Color to represent each of the following decimals.

a. 0.5

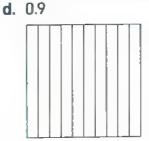


b. 0.3



c. 0.6





Solution [8]



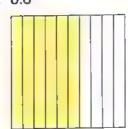
a. 0.5



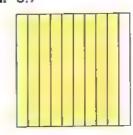
b. 0.3



c. 0.6



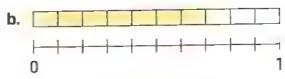
d. 0.9



Let your child understand that each figure is divided into 10 equal parts. This is why the denominator of the fraction is 10.

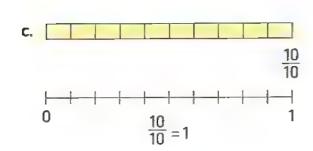
Write the fraction and decimal which represent the colored parts and represent it on the number line.

- c. 0 1



Solution 🖤

- $\frac{3}{10} \\
 0 \quad 0.3 \quad 1$ $\frac{3}{3} = 0.3$
- b. $\frac{\frac{7}{10}}{0}$ 0.7 1 $\frac{7}{10} = 0.7$



Remarks

- 1 meter (m) = 10 decimeters (dm) 50,1 dm = $\frac{1}{10}$ m = 0.1 m
- 1 decimeter (dm) = 10 centimeters (cm) so, 1 cm = $\frac{1}{10}$ dm = 0.1 dm
- 1 centimeter (cm) = 10 millimeters (mm) so, 1 mm = $\frac{1}{10}$ cm = 0.1 cm

your understanding

1. Write each fraction as a decimal.

a.
$$\frac{9}{10}$$
 =

b.
$$\frac{2}{10} =$$

c.
$$\frac{8}{10} =$$

d.
$$\frac{6}{10} =$$

2. Write each decimal as a fraction.

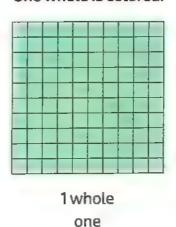
Notes for parents :

Select one exercise from this page and ask your child how he / she solved it.

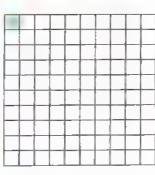
Learn 2 Exploring Hundredth

• Look at the models below. Each model has 100 equal parts:

One whole is colored.



One part is colored.

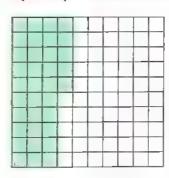


 $\frac{1}{100}$ of a whole

Read: One hundredths

Write: 0.01

Thirty-five parts are colored.



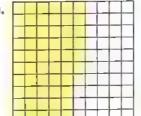
of a whole

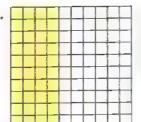
Read: Thirty-five hundredths

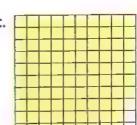
Write: 0.35

Example 4

Write the decimal that represents each colored part.









Solution [



a. 0.56

b. 0.40

c. 0.97

d. 0.08

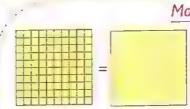
Remark

You can name the same amount in different ways.



$$\frac{4}{10} = \frac{40}{100}$$

10 0.4



= 1

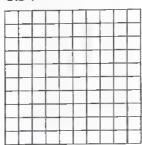




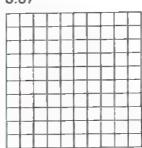
[·] Make sure your child understand that there are 100 squares on each grid. This is why the denominator of the fraction is 100.

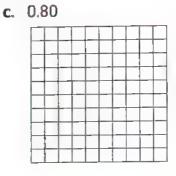
Color each of the following grids to represent the following decimals.

a. 0.34

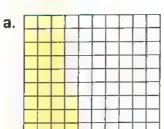


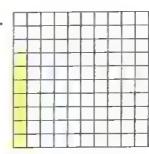
b. 0.07

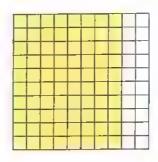




Solution 🕎







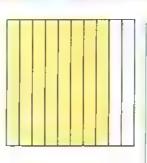
Remark

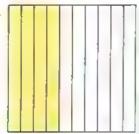
1 meter = 100 cm

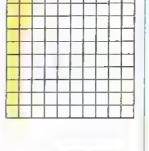
Then
$$1 cm = \frac{1}{100} m = 0.01 m$$

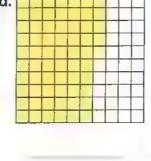
your understanding

Write the fraction and the decimal to name each colored part.









Notes for parents:

· Select one exercise from this page and ask your child explain how he/she solved it.

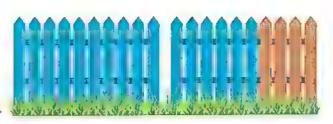
Learn 3 Decimals greater than one

Problem

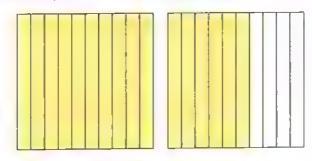
Mr. Bassem is painting the fence around

his yard. There are 10 sections. Each section

has 10 boards. Mr. Bassem painted 16 boards so far.



What decimal shows how many sections he has painted?

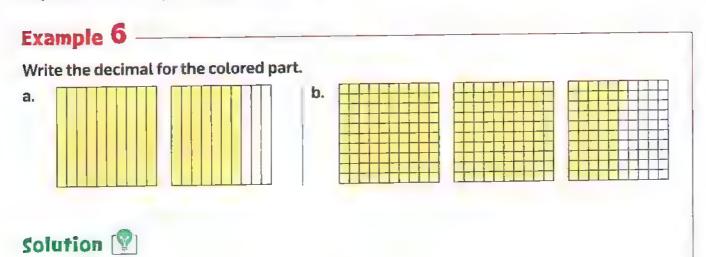


Write:

1.6

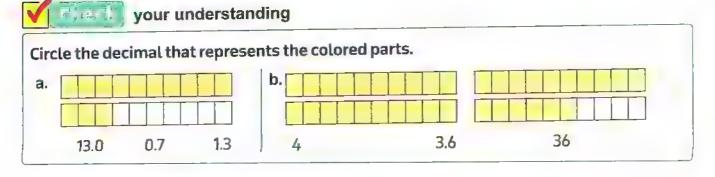
Read: One and six tenths.

So, Mr. Bassem has painted 1.6 sections of fence.



a. 1.7

b. 2.52



[·] Challenge your child how he/she can write 2.7 as a fraction.

Exercise

- ▶ Let's Explore Decimals
- ▶ Hundredths



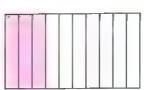




I From the school book

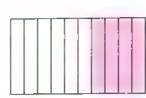
1. Write the decimal to name each colored parts.

a.

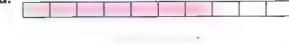




C.

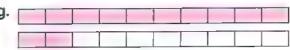


d.





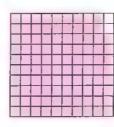




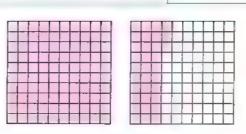
2. Record what decimal is shown.







d.



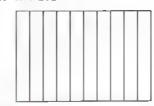


3. Shade in the model to represent the decimal.





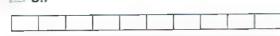
b. 🕮 0.6



c. 🕮 0.9



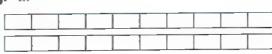
d. 🕮 0.7





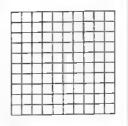


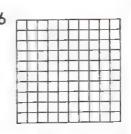
g. 1.7

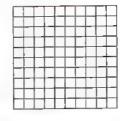


4. Shade in the grids to show the decimal stated.

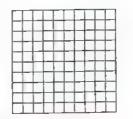


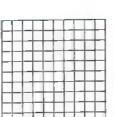




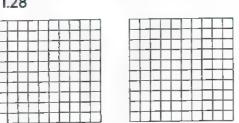


d. 1.3

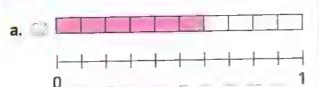


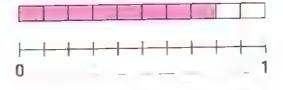


e. 21.28

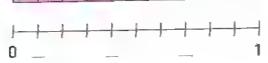


5. Record what fraction and decimal are shown.

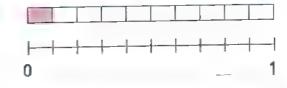




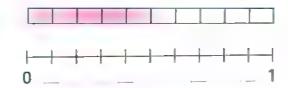




d.



е.



f. ...

6. Write each of the following as a decimal.

a.
$$\frac{7}{10}$$

- b,
$$\frac{1}{1}$$

c.
$$\frac{3}{10}$$

d.
$$\frac{2}{10}$$

f. 1

h.
$$\frac{3}{100}$$

7. Write each of the following as a fraction.

b. 0.6

c. 0.8

d. 0.1

f. 0.69

g. 0.08

h. 0.02

8. Write the result of each of the following as a decimal.

a.
$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$$

b.
$$\frac{3}{10} + \frac{4}{10} =$$

c.
$$\frac{5}{10} + \frac{1}{10} + \frac{3}{10} =$$

d.
$$\frac{8}{10} - \frac{3}{10} =$$

e.
$$\frac{15}{10} - \frac{11}{10} =$$

f.
$$\frac{23}{100} + \frac{41}{100} =$$

g.
$$\frac{6}{100} + \frac{70}{100} =$$

h.
$$\frac{1}{100} + \frac{1}{100} + \frac{1}{100} =$$

i.
$$\frac{35}{100} - \frac{14}{100} =$$

j.
$$\frac{99}{100} - \frac{50}{100} =$$

9. Write about math. How is 0.1 (one-tenth) similar to 1 divided by 10?

10. Hossam had a 1-meter piece of fabric. Of this piece, 0.2 meter had flowers on it, 0.6 meter was plain blue, and the rest had stars.
Color in the strip of Hossam's fabric based on the description.
What decimal of Hossam's strip had stars?

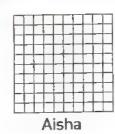
11. Bassem had a quilt that his mother bought for him.0.35 of it was colored blue. 0.4 of it was red. The rest was yellow.Color in the quilt to match the decimals described.

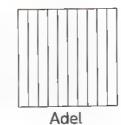
What decimal of Bassem's quilt was yellow?

12. Aisha was coloring in a Hundredths grid. She colored in 30 squares or 0.30. Adel walked by and said, "Oh, I see you colored in 3 Tenths".

Is Adel correct? How do you know?

Color in the grid to check your thinking.





13. There are 100 centimeters in 1 meter. Use your ruler, then measure the paper clip in centimeters. Then write the length as a fraction and as a decimal of a meter.



Challenge

14. Is 0.70 greater, less than or equal to 0.7? Explain.

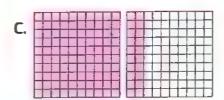
15. What's the error? Aly says 0.20 is equal to $\frac{2}{100}$. Describe his error.

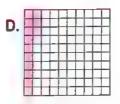
Choose the correct answer.

1. Which of the following represents 0.12?





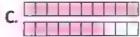




2. Which of the following represents 1.2?









The colored part in the figure

represents

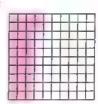




D. 0.50

4. The colored part in the figure

represents



A. 0.30

B. 0.32

C. 3.2

D, 32

 $\frac{3}{10} =$

(as a decimal)

(Luxor 23)

6. $\frac{2}{100}$ =

(Ismailia 23, Cairo 23)

A. 0.7

A. 5

C. 50

B. 0.3

A. 0.2

B. 0.20

C. 0.03

D. 0.07

c. $\frac{20}{10}$

D. 0.02

7. 0.7 =

[Souhag 23, El-Monofia 23]

A. 10

c. $\frac{7}{100}$

8. Which of the following is equal to 1?

A. 0.1

B. 1.1

9. Which decimal shows eight hundredths?

A. 8.00

B. 0.08

C. 0.80

D. 800

10. 0.49 =

A. $\frac{49}{10}$



- The Place Walle
- Dreceimable in Difficulant Forms



Learn 1 Decimal place value

A table tennis ball weighs between 2.4 grams and 2.53 grams.

You can use a place-value chart to show decimals.

Ones		Tenths	Hundredths	
2		4		
2	ĸ	5	3	



In 2.4, the place to the right of the decimal point shows how many tenths.

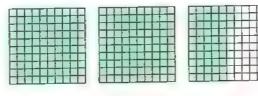
Read 2.4 as: two and four tenths.

- The value of 2 is 2
- The value of 4 is $0.4 = \frac{4}{10}$



In 2.53, the places to the right of the decimal point show how many hundredths. Read 2.53 as: two

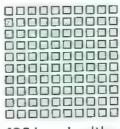
- and fifty-three hundredths.
- The value of 2 is 2
- The value of 5 is 0.5 $[=\frac{5}{10}]$
- The value of 3 is $0.03 \left[= \frac{3}{100} \right]$











One whole = 10 tenths

100 hundredths



Talk about it
Whot is the value

of each 5 in 2.55?

One tenth = 10 hundredths

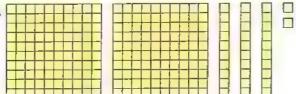
Notes for parents :

- When discussing the lesson, focus on the importance of the place-value relationship between tenths and hundredths. You may wish to ask questions such as the following:
- How many hundredths make 1 tenth ? 10
- How many tenths are there on a hundredths grid? 10



Write the decimal to describe each model.



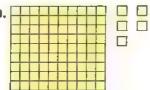


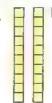


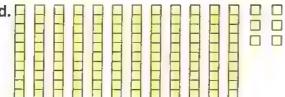


stands for one tenth.

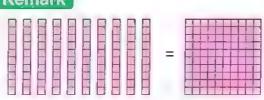
stands for one hundredth.

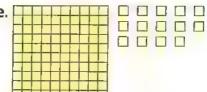






Remark





Remark



Solution 💱



a. 2.32

b. 1.05

c. 0.21

d. 1.26

e. 1.14

Notes for parents:

Make sure that your child understand how he/she review 10 tenths as 1 whole.

The place value of decimals

I'm in the Hundreds place.

I'm in the Tens place.

I'm in the Ones place.

I'm the decimal point.

I'm in the Tenths place,

I'm in the Hundredths place.



My value is 200



My value is 40



My value is 9



My value



My value is $0.5 \left[= \frac{5}{10} \right]$ is $0.07 \left[= \frac{7}{100} \right]$

Example 2

- a. Write a number formed from 6 Ones, 4 Tenths, 8 Hundredths.
- b. Write a number formed from two and seven hundredths.
- c. Write a number formed from fifteen and thirty-one hundredths.

Solution [V]



a. 6.48

b. 2.07

c. 15.31

Example 3

In the number 325.78

- a. What is the value of 7?
- b. What is the value of 2?
- c. What is the value of the digit in Hundredths place?

Solution 🕎



a. 0.7

b. 20

c. 0.08



your understanding

Write the value of the circled digit in each of the following.

a. 32.74

b. 174.(2)5

c. 1(3)5.58

d. 742.27

Let your child point to each digit in the decimal number and say the value and the place value of it.

Learn 2

Different forms of decimals

Decimals like whole numbers can be written in standard form, word form, unit form and expanded form.

Ones		Tenths	Hundredths
2	۰	7	
3	•	6	5
5		0	3

Standard form	Word form	Unit form	Expanded form	
2.7	Two and seven tenths	2 Ones,7 Tenths	2+0.7	
3.65	Three and sixty-five hundredths	3 Ones ,6 Tenths , 5 Hundredths	3+0.6+0.05	
5.03	Five and three hundredths	5 Ones , 3 Hundredths	5 + 0.03	

Example 4

Write in word form.

a. 7.12

b. 3 + 0.7 + 0.04

c. 6 Ones ,8 Hundredths.

Solution 🕎



a. Seven and twelve hundredths.

b. Three and seventy-four hundredths.

c. Six and eight hundredths.

Example 5

Write in expanded form.

- a. Four and eighteen hundredths.
- **b.** 3.09
- c. 7 Ones, 2 Tenths.

Solution [🖤



a. 4+0.1+0.08

- **b.** 3 + 0.09
- c. 7 + 0.2

Example 6

Write in unit form.

a. 8 + 0.1 + 0.03

- b. Two and forty hundredths.
- **c**. 3.41

Solution [



- a. 8 Ones, 1 Tenth, 3 Hundredths.
- b. 2 Ones, 40 Hundredths. [Or 2 Ones, 4 Tenths].
- c. 3 Ones, 4 Tenths, 1 Hundredth.

Notes for parents:

 Give your child a decimal as 2 35 and ask him/her to write this decimal in different forms as possible as he/she can.

Complete to represent the model.

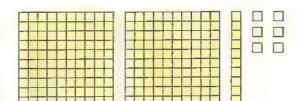
- 1. a. Standard form:
 - **b.** Word form: _____
 - c. Unit form:
 - d. Expanded form:



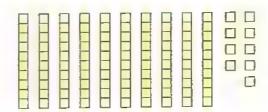
stands for one whole.

stands for one tenth.

stands for one hundredth.



- 2. a. Standard form:
 - b. Word form:
 - c. Unit form:
 - d. Expanded form: _____



Solution [



- 1. a. 2.16
 - b. Two and sixteen hundredths
 - c. 2 Ones, 1 Tenth, 6 Hundredths
 - d_{1} 2 + 0.1 + 0.06

- 2. a. 1.09
 - b. One and nine hundredths
 - c. One, 9 Hundredths
 - d. 1 + 0.09





your understanding

Complete.

- a. 3.72 in expanded form is —
- **b.** 5 + 0.1 + 0.07 in word form is
- c. Seven and thirteen hundredths in standard form is
- d. 9.71 in unit form is
- After your child write decimals in this page, ask him/her to tell which digit is in the tenths place and which is in the hundredths place.
- For any decimal in this page, let your child tell the digit and its value for example : 3,72 is 3 ones, 7 tenths, 2 hundredths.

Exercise on lessons 3&4

- ▶ The Place Value
- Decimals in Different Forms
- E From the school book ROBLEM SOLVING REMEMBER Write a number that represents Given each model. stands for stands for stands for one 8 one tenth. hundredth. one whole. b. a. d. C. f.

- 2. Use the number to answer the questions: 532.89
 - a. What is the value of the 3?

- b. What digit is in the Hundredths place?
- c. What is the value of the digit in the Hundreds place?
- d. What digit is in the Tenths place?
- e. Why is the value of the digit in the Hundredths place worth less than the digit in the Tenths place if Hundreds are greater than Tens?

3.	a.	Write a nun	nber formed	from 7 Or	nes, 9 Tenth	s,8 Hundredths.
----	----	-------------	-------------	-----------	--------------	-----------------

- b. Write a number formed from 2 Tenths, 9 Hundredths.
- c. Write a number formed from five Ones, three Tenths, four Hundredths.
- d. Write a number formed from sixty-seven Hundredths.
- e. Write a number formed from one Ones, four Hundredths.

4. Complete.

a. The value of the digit 6 in the number 2.65 is

[Giza - Abo El Nomros 22]

- b. The value of the digit 5 in the number 132.85 is —
- c. The value of the digit 9 in the number 19.82 is
- d. The place value of the digit 7 in the number 2.74 is
- e. The place value of the digit 0 in the number 10.62 is
- f. The place value of the digit 5 in the number 12.15 is

(Giza - Omrania 22)

5. Write the number in standard form.

a.
$$\square$$
 5 + 0.5 + 0.01 -

- c. 27 Ones, 9 Hundredths
- d. 5 Ones, 8 Tenths, 2 Hundredths
- e. A Nine and forty-three hundredths
- f. Four and seven hundredths -
- g. Forty-seven hundredths -----



6. Write the number in word form.

- a. 🕮 4.53
- **b.** 📖 0.48
- c. 7.8
- d. 3.71
- e. 4 2 + 0.1 + 0.03
- f. 4 + 0.02
- g. 7 Ones, 3 Tenths, 7 Hundredths
- h. 20nes,9 Hundredths

Write the number in expanded form.

a. 4.73

b. 🖳 2,04

c. 🛴 Two and fifty hundredths

d. One and eighteen hundredths

e. 🕮 5 Ones , 6 Tenths , 8 Hundredths

f. 6 Ones, 1 Tenth, 4 Hundredths

8. Write the number in unit form.

a. 4.52 [Port Said 23]

b. 8.5 [Cairo - Zeitoon 22]

c. 🖂 Seven and thirty-four hundredths

d. Fourteen hundredths

e. 🕮 Sixty-nine hundredths

f. 7 + 0.6 + 0.01

9. Answer the following questions.

a. Write the numbe 3.27 in:

[El-Beheira 23]

[El-Monofia 23]

- Word form :
- Expanded form:

b. Write the required forms for the decimal number 4.27:

[El-Beheira 23]

- Expanded form:
- Unite form:

c. A tree with a length of 5 $\frac{45}{100}$. Represent the length of the tree in decimal form, then in word form.

(decimal form)

[word form]

Complete to represent each model.a. Standard form:	stands for one whole.
Word form: Unit form: Expanded form:	
b. Standard form: Word form: Unit form: Expanded form:	
c. Standard form: Word form: Unit form: Expanded form:	
d. Standard form: Word form: Unit form: Expanded form:	
e. Standard form: Word form: Unit form:	

Expanded form:

11. Complete each of the following.

- a. Seven tenths =
- b. Nine hundredths =
- c. Twenty two and thirty-five hundredths =
- d. Eighteen and six tenths = -
- [Kafr El-Sheikh 23] e. 5 Ones, 6 Tenths, 8 Hundredths = -
- [Alex, 23] f. 2 Ones, 3 Tenths, 5 Hundredths = — (as a decimal)
- [El-Monofia 23] g. Five and five hundredths =
- [Cairo 23] h. Five and three tenths =
- [Aswan 23] i. 6 tens and 8 tenths =
- [Alex. 23] Two and nineteen hundredths =
- [El-Monofia 23] k. 4.9 = 4 +
- L. 4 + 0.3 + 0.08 = [standard from] [Giza 23]
- [Cairo 23] m. $6 \div 0.6 \div 0.06 =$
- $n_1 = 38 \div 0.6$
- **o**. 6.48 = 6 + + 0.08
- p. 3 + 0.03 + 0.3 =

Challenge

12. I am a decimal greater than 1 but less than 3. All my digits are even. My Tenths digit is three times my Ones digit. My Hundredths digit is 8. What decimal am 1?



Choose the correct answer.

1. The word form	of 0.6 is	2. Which shows 6.0	5 written in word form?
	[El-Monofia 23]	🔏 🗛. Six hundred fi	ve.
A. sixty	B. six	B. Six and five hu	ındredths.
C. six tenths	D. six hundredths	C. Six and five te	nths.
		D. Six and fifty he	undredths.
3. The expanded f	orm for the number 3.15	4. The expanded form	n for the number 2.35
is —	[Cairo 23]	is —	[Cairo - Nozha 22]
A. $3 + 0.2 \pm 0.03$	B. 3 + 0.1 + 0.05	A. $2+0.5+0.03$	B. $2 + 0.3 + 0.05$
C . 5 + 0.1 + 0.3	D. $1 + 0.3 + 0.5$	c. 3 + 0.5 + 0.02	D. 5 + 0.2 + 0.03
5. The standard fo	orm for the number:	6. Four and thirty-ty	wo hundredths
3 Ones, 5 Tenths	and 7 Hundredths	= - ~	[El-Monofia 23]
is -	[EL-Gharbia - Tanta 22]	A. 0.43	B. 4.32
A. 3.57 C. 7.53	B . 3.75 D. 5.37	c . 40.32	D. 4.23
7. Thirty-three hu	ndredths =	8. Two and eight hu	ndredth =
.,	[El-Beheira 23]		[El-Menia 23]
A . 3300	B. 30.03	A. 2.8	B. 2.08
c. $\frac{33}{10}$	D. 0.33	C. 8.2	D. 280
9. 71 hundredths	equals	10. 53 hundredths =	
@	[Port Said 23]	<u>@</u>	[Kafr-El Sheikh 23]
A. $\frac{7}{100}$	B. 0.29	A. $\frac{5}{100}$	B. 0.8
c. 0.71	D. $\frac{17}{100}$	C. 0.53	D. $\frac{35}{100}$
11. 5 + 0.7 + 0.02 =		12. 2.65 = 2+	[Kafr El-Sheikh 23
•	[Kafr-El Sheikh 23]	A. 65	B . 0.065
A , 0.572	B. 27.5	C . 6.5	D . 0.65
C . 5.72	D . 5.27		
13. 60.57 = 60 +	+ 0.07	14. The value of the	
A. 500	B . 50	0.19 is	(Aswan 23
C. 5	D. 0.5	A. 9	B . 0.09

C. 0.9

D. 90

Concept



Decimals and Fractions





Did you Know ?!

in 2009. Usgin Bolt set tine world record in the 100-metre sprint at: 9.58 seconds. He still known as the fastest man in the world.

£ 21,0	\$ 5 5 · 5 / 6	22 1 ,5 1 4 4 5
Lessons 5 & 6	Same Value, Different Ways	Students will read and write decimals as fractions.
:	The Whole Breakdown	Students will explain the relationship between decimals and fractions. Students will explain the relationship between decimals, fractions and the whole.
Lesson 7	All Things Equal	Students will create equivalent fractions and decimals to the Hundredths place.

Lithhink

- Same Value Different Ways
- ▶ The Whole Breakdown

Learn 1 Same value in different forms

In the long jump competition,

Adel jumped two and six tenths metres.

How can you represent this length in different forms?



Model:







Mixed Number: $2\frac{6}{10}$

Decimal: 2.6

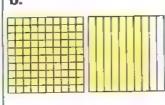
Word form: Two and six tenths.

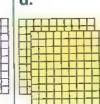


Write the fraction and the decimal for the colored parts.

a.







d.

Solution []

a.
$$\frac{2}{10}$$
 , 0.2

c.
$$\frac{27}{100}$$
 , 0.27

b.
$$1\frac{8}{10}$$
 , 1.8

d.
$$2\frac{4}{100}$$
 , 2.04

Notes for parents :

 Remind your child that he/she can write three forms for the colored parts which are the fraction, the decimal and the word form.

Example 2

Write the fraction for each of the following decimals.

a. 0.4

b. 0.13

c. 0.07

d. 2.93

Solution 🕎



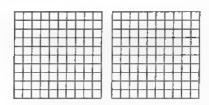
a. $\frac{4}{10}$

d. $2\frac{93}{100}$

Example 3

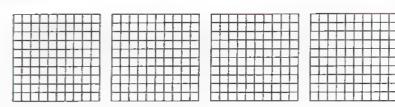
Color a model for each decimal and write it in fraction form.

a. 1.28



The fraction is

b. 3.02

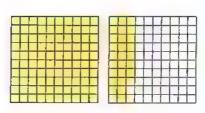


The fraction is

Solution 🕎

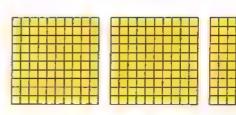


a.



The fraction is 1 28

b.



The fraction is $3\frac{2}{100}$



your understanding

Write the fraction form for each of the following decimals.

- b. 2.7———
- c. 3.74

d. 7.05 -

Notes for parents:

Ask your child to choose one problem from the check your understanding and explain his/her answer.

Learn 2 The parts of the one whole

There are 10 tenths in the whole one

Then,
$$1 = 10$$
 tenths $= \frac{10}{10}$



Examples

• 5 = 50 tenths =
$$\frac{50}{10}$$

• 1.7 = 17 tenths =
$$\frac{17}{10}$$

• 9 = 90 tenths =
$$\frac{90}{10}$$

• 10.3 = 103 tenths =
$$\frac{103}{10}$$

There are 100 hundredths in the whole one

Then, 1 = 100 hundredths =
$$\frac{100}{100}$$



Examples

• 5 = 500 hundredths =
$$\frac{500}{100}$$

• 1.7 = 170 hundredths =
$$\frac{170}{100}$$

• 9 = 900 hundredths =
$$\frac{900}{100}$$

• 10.3 = 1030 hundredths =
$$\frac{1030}{100}$$

More Examples



Valledk your understanding

Complete.

- Some Walke Different ways
- The Whole Breakdown

- REMEMBER UNDERSTAND AFFRUY ♣ PROBLEM SOLVING
- From the school book

1. Express each modal as a fraction and a decimal.

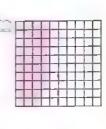




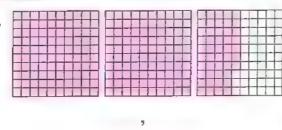
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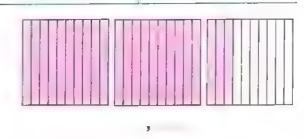
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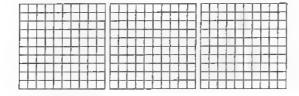


f.

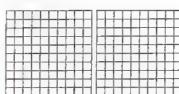


2. Color a model for each decimal and write it as a fraction. (in the simplest form)

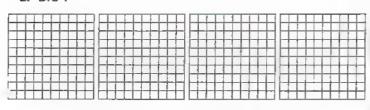
a. 2.93



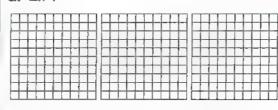
b. 1.32



c. 3.04



d. 2.74



Express the decimals as fractions in simplest form.

	a. How many tenths are there in one who	te :
	b. How many hundredths are there in 3?	
	c. How many tenths are there in 10?	
	d. How many tenths are there in 2?	
	e. How many hundredths are there in 5?	
	f. How many hundredths are there in 10?	
	Decompose the units to represent each r	number as Tenths and then write
	the number as a fraction.	
	a. 🚇 3	b. 🖾 1
	Tenths:	Tenths:
	In fraction form:	In fraction form : —
	c. 4	d. 1.5
	Tenths:	Tenths: ——
	In fraction form:	In fraction form:
	e. 🕮 2.3	f. 🚅 10.8
	Tenths: ———	Tenths:
	In fraction form:	In fraction form:
- 6.	Decompose the units to represent each r	number as Hundredth and then write
•	the number as a fraction.	
	a. 🕮 1	b. 25 3
	Hundredths: ——	Hundredths:
	In fraction form:	In fraction form:
	c. 19	d. <u>C</u> 1.5
	Hundredths:	Hundredths:
	In fraction form:	In fraction form:

4. Answer the following.

e. 🕮 2.3

Hundredths:

in fraction form:

f. 10.8

Hundredths:

In fraction form:

g. 13.2

Hundredths:

In fraction form:

h. 0.4

Hundredths:

In fraction form:

Complete.

a. 2.4 =

tenths [El-Beheira 23]

b. 7.5 =

d. 3.74 =

tenths [Kafr-El-Sheikh 23]

c. 5.2 =

hundredths

tenths

f. $\frac{19}{10}$ =

tenths

g. $\frac{143}{100}$ =

e. 89.5 =

hundredths

h. 18.5 =

(in a fraction form)

hundredths

[Giza 23]

i. 3.4 =

(as an improper fraction)

[Kafr El-Sheikh 23]

j. $1.9 = \frac{10}{10}$ [as a fraction]

[El-Monofia 23]

— [as a mixed]

(Ismailia 23)

L. 4.5 tenths =

(as a decimal)

[Cairo 23]

m. 198 tenths =

[as a decimal]

n. 291 hundredths =

(as a fraction)

o. 2 + 0.5 = [as a mixed number]

p. 1 + 0.8 + 0.06 = [as a mixed number]

q. 15 + 0.7 =

[as an improper fraction]

 $r. 25 \pm 0.25 =$

[as an improper fraction]

- 8. Ayda has a brother of height $50\frac{1}{10}$ cm
 - · Express the height in the form of a decimal
 - How can you rewrite $50\frac{1}{10}$ cm using tenths only?
- 9. Ahmed surveyed 100 students, $\frac{38}{100}$ of them have a dog for pet.
 - How many students have a dog?
 - How can you rewrite $\frac{38}{100}$ using hundredths?



Multiple Choice Questions

Choose the correct answer.

A.
$$\frac{2}{10}$$

c. $\frac{22}{100}$

B.
$$\frac{2}{100}$$
 D. $\frac{20}{10}$

A.
$$1\frac{5}{10}$$

c. 1
$$\frac{50}{100}$$

B.
$$1\frac{5}{100}$$

D.
$$1\frac{15}{100}$$

3.
$$\frac{13}{100}$$
 =

C. 0.13

A.
$$5\frac{7}{100}$$

B.
$$5\frac{70}{100}$$

c.
$$\frac{57}{100}$$

29 tenths =

D. 7
$$\frac{5}{10}$$

hundredths.

[Alex. 23]

8. 47 hundredths =

C.
$$\frac{47}{10}$$

[Giza 23]

A. 34

A. 70

12.
$$2\frac{3}{10} =$$
 tenths

B. 0.15

C.15

C. 80

All Things Equal

Learn

Equivalent fractions

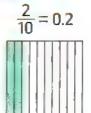
Equivalent fractions are fractions that name the same number.

Use models and paper folding to find equivalent fractions.

Are $\frac{2}{10}$ and $\frac{20}{100}$ equivalent fractions?

Activity

Color $\frac{2}{10}$ of the tenths model and $\frac{20}{100}$ of the hundredths model.



Two tenths 2 out of 10

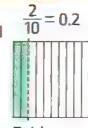


Twenty hundredths 20 out of 100

Fold $\frac{2}{10}$ of the tenths model and

 $\frac{20}{100}$ of the hundredths model.

Then, compare the models.



The folded parts of the models are the same size.

So, $\frac{2}{10}$ and $\frac{20}{100}$ are equivalent fractions and 0.2 and 0.20 are equivalent decimals.

Example 1

Write the equivalent fraction and the equivalent decimal to represent the colored part.





The fraction: $\frac{7}{10}$ =

The decimal: 0.7 =

Notes for parents:

· Remind your child to write a 0 in the hundredths place for decimals given in tenths.





The fraction: $\frac{30}{100}$ =

The decimal: 0.30 =

Solution 💖



a. The fraction: $\frac{7}{10} = \frac{70}{100}$

The decimal: 0.7 = 0.70

b. The fraction: $\frac{30}{100} = \frac{3}{10}$

The decimal: 0.30 = 0.3

Example 2

Write the equivalent fraction and the equivalent decimal to each of the following.

a. $\frac{60}{100}$ The fraction =	
------------------------------------	--

b.
$$\frac{9}{10}$$

b.
$$\frac{9}{10}$$
 The fraction =

The decimal =

The decimal =

Solution [V]



a.
$$\frac{6}{10}$$
, 0.6 **b.** $\frac{90}{100}$, 0.90 **c.** $\frac{2}{10}$, 0.2 **d.** $\frac{10}{100}$, 0.10

c.
$$\frac{2}{10}$$
, 0.2

d.
$$\frac{10}{100}$$
 , 0.10





your understanding

Write the equivalent fraction and the equivalent decimal to each of the following.

The fraction is

b. $\frac{4}{10}$ The fraction is =

The decimal is -

c. 0.50 The fraction is

d. 0.6

The fraction is

The decimal is

The decimal is

The decimal is

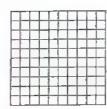
[•] Ask your child to write $\frac{9}{10}$ in two ways, once with one decimal place and the other with two decimal places.

- ROBLEM SOLVING
- From the school book

1. Create an equivalent model, record its fraction and write as a decimal fraction.





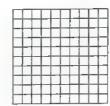


The fraction: $\frac{8}{10}$ =

The decimal: 0.8 =

b. 🕮



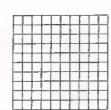


The fraction : $\frac{30}{100}$ =

The decimal: 0.30 =

C. 🕮



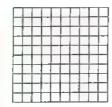


The fraction: $\frac{5}{10}$ =

The decimal: 0.5 =

d.





The fraction:

The decimal: ---=

2. Write equivalent or not equivalent.



c. 0.9 and 0.09

e. 0.17 and 0.07

b. 0.04 and 0.4

d. 0.28 and 0.82 —

f. 0.1 and 0.10

3. Write an equivalent decimal for each. You may use decimal models.

a. 0.8

- **b.** 0.7
- c. 0.90
- d. 0.2

e. 0.5

- f. 0.10
- g. 0.40
- h. 0.6

4. Write equivalent or not equivalent.



c.
$$\frac{80}{100}$$
 and $\frac{8}{10}$

e.
$$\frac{60}{100}$$
 and $\frac{6}{10}$

b.
$$\frac{5}{100}$$
 and $\frac{50}{10}$

d.
$$\frac{4}{100}$$
 and $\frac{4}{10}$ —

f.
$$\frac{20}{100}$$
 and $\frac{2}{100}$

5. Write an equivalent fraction for each.

a. 7/10

- **b**. $\frac{80}{100}$
- **c.** $\frac{9}{10}$
- d. $\frac{4}{10}$

e. $\frac{10}{100}$

- f. $\frac{20}{100}$
- g. 3

h. $\frac{50}{100}$

6. Record an equivalent fraction and an equivalent decimal for each problem.

a. 🕮 10

The fraction:

The decimal:

b. $\square \frac{70}{100}$

The fraction:

The decimal:

c. 🕮 6

The fraction:

The decimal:

d. 🕮 0.4

The fraction:

The decimal:

e. 🕮 0.30

The fraction:

The decimal:

f. 🕮 0.9

The fraction:

The decimal:

g. $\frac{10}{10}$

The fraction: — –

The decimal:

h. $1\frac{4}{10}$

The fraction:

The decimal:

i. 🕮 2.1

The fraction:

The decimal: --

j. 3 30 100

The fraction:

The decimal:

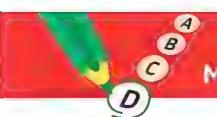
7. Fill the missing denominator or numerator. Circle the fraction that is more than 1 whole.

- **a.** $\frac{5}{10} = \frac{50}{10}$
- **d.** $\square \frac{200}{100} = \frac{\square}{10}$
- g. $\frac{3}{10} = \frac{100}{100}$
- j. $\frac{900}{100} = \frac{10}{10}$

- **b.** $\square \frac{20}{100} = \frac{\square}{10}$
- e. $\frac{70}{10} = \frac{7}{10}$
- **h.** $\frac{60}{100} = \frac{10}{10}$
- k. $\frac{8}{100} = \frac{80}{100}$

- c. $\square \frac{4}{10} = \frac{40}{\square}$
- **f.** $\frac{80}{10} = \frac{100}{100}$
- i. $\frac{70}{10} = \frac{100}{100}$
- $L = \frac{10}{100} = \frac{10}{10}$

Challenge



Multiple Choice Questions

Choose the correct answer.

1.
$$\frac{70}{100} = \frac{7}{-}$$

[Giza 23]

2. $\frac{3}{10}$ is equivalent to $\frac{1}{100}$

[El-Beheira 23]

A. 10

B. 100

A. 3

B. 30

- C. 1000
- **D.** 10000

C. 0.3

D. 13

3. 0.4 is equivalent to

[El-Menia 22, El-Monofia 23]

A. 0.20

C. 2.0

4. Which fraction is equivalent to 0.3?

- **A.** $\frac{30}{10}$
- c. 3

 $\frac{2}{10}$ is equivalent to =

[El-Menia 23]

- **B.** 0.02
- D. 2.2

- 6. $3\frac{7}{10}$ is equivalent to
 - A. 0.37
- **B**. 3.07
- C. 3.70
- D. 37

7. Which of the following is equivalent

to $\frac{6}{10}$?

- 'A. 0.60
- **B.** 0.06

c. $\frac{60}{10}$

D. 1.6

- 8. Which fraction is equivalent to 0.3?
 - **A**. 30

 C_{10}

D. 300

- 9. Which fraction is equivalent to 0.45?
 - **A.** 450 100

C. $\frac{45}{10}$

- **B.** $\frac{450}{10}$
- **D.** $\frac{45}{100}$
- 10. 8 tenths is equivalent to
 - A. 0.08
- c. $\frac{8}{100}$

- 11. 70 tenths is equivalent to
 - **A.** 0.7

- **B.** 0.07
- C. 0.70
- D. 7

12. Which of the following is NOT equivalent

to 50 ?

A. $\frac{5}{10}$

- **B.** 0.5
- C. 0.50
- **D.** 0.05

Concept Operations on Decimals Fast Fact Female kangaroos sport a pouch on their belly (made by a fold in the skin) to cradle baby kanga oos called joeys Newborn seys are tiny measurine flust 2.5 centimetres or about the size of a straige Students will compare decimals that do not have the same number of Comparing Decimals digits. Lessons Students will compare decimals with fractions that have 10 or 100 as the 8&9 Comparing Fractions and denominator. Decimals Students will use models to add two fractions with related denominators. Adding Fractions with Denominators 10 and 100 **Using Models** Lessons Students will add two fractions with related denominators. Adding Two Fractions 10 & 11 with Denominators 10 and 100 by Converting into

Equivalent Fractions.





- Comparing Fractions and Decimals



Learn 1 Comparing Decimals

You can use place value charts to compare decimals.

Compare 0.36 and 0.56

Ones	٠	Tenths	Hundredths
0		3	6
0		5	6

For examples:

- Begin with the digit in the greatest place value.
- Compare ones: 0 ones = 0 ones
- Compare tenths: 3 tenths < 5 tenths

So, 0.36 **<** 0.56

Compare 0.6 and 0.06

Ones	Tenths	Hundredths
0	6	0
0	0	6

- Begin with the digit in the greatest place value.
- Compare ones: 0 ones = 0 ones
- Compare tenths: 6 tenths > 0 tenths

So, 0.6 (>) 0.06

Example 1

Use place value chart to compare the following decimals.

- a. 1.42 and 1.25
- **b.** 1.7 and 1.73
- c. 2.8 and 2.80

Line up the decimal points. Compare the digits, beginning with the greatest place value.

Solution [

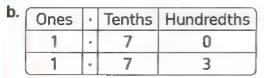


Ones		Tenths	Hundredths
1		4	2
1	۰	2	5

1 = 1 4 > 2

Since, 4 > 2 So, 1.42 > 1.25





1 = 1 7 = 7

0 < 3

Since, 0 < 3 So, 1.7 (1.73

C.	Ones		Tenths	Hundredths
	2	٠	8	0
	2		8	0

2 = 2

8 = 8

0 = 0

So, 2.8



2.80

Notes for parents:

Remind your child to begin comparing with the greatest place value.



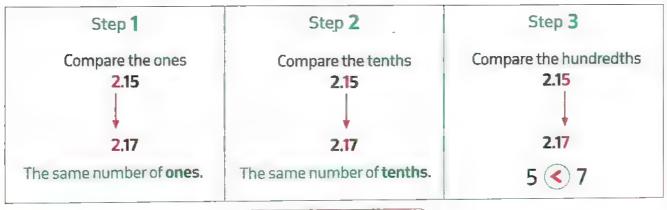
Examp	le 2
-------	------

Compare 2.15 and 2.17

Solution [🖤



To compare 2.15 and 2.17, follow the following steps:



So, 2.15 < 2.17



your understanding

- 1. Use place value chart to compare each of the following two decimals.
 - a. 0.37 and 0.7

Ones	٠	Tenths	Hundredths

b. 0.35 and 0.29

Ones	Tenths	Hundredths

c. 0.80 and 0.09

Ones	٠	Tenths	Hundredths		

d. 0.6 and 0.60

Ones		Tenths	Hundredths				

2. Compare. Write ">, < or = ".

a. 0.52		0.54
----------------	--	------

0.82 **b.** 0.9

c. 1.52 1.45

d. 3.7 (3.70

4.56 e. 3.4

2.15 f. 2.05 (

Remind your child to begin comparing with the greatest place value.

Learn 2

Comparing decimals and fractions in different forms

You can compare decimals in different forms.

For example:

• Compare 5 62 and 5.47

Rewrite $5\frac{62}{100}$ as a decimal.

$$5\frac{62}{100} = 5.62$$



Ones	· Tenths		Hundredths
5	-	6	2
5		4	7

- Begin with the digit in the greatest place value.
- Compare the ones: 5 ones = 5 ones
- Compare the tenths: 6 tenths > 4 tenths

So, 5.62 is greater than 5.47 5.62 > 5.47

Example 3

Compare using ">, < or =".

- a. 0.37 $\frac{4}{10}$
- c. 24 tenths 0.24
- **e.** 3.00 $\frac{30}{100}$

- **b.** 1.02
- d. 2 Ones,5 Tenths 2.05

Solution [7]

- **a.** Since, $\frac{4}{10} = 0.4$ So, 0.37 < 0.4
- c. Since, 24 tenths = 2.4, 50, 2.4 > 0.24
- e. 3.00 > 0.30

- **b.** Since $\frac{102}{100} = 1.02$ So, 1.02 = 1.02
- **d.** 2.5 > 2.05

your understanding

Compare using ">, < or =".

- a. 3+0.1+0.07 () 3.2
- c. $9.01 \bigcirc 8 \frac{92}{100}$

- **b.** 5 hundredths (
- d. 4 ones, 3 tenths, 1 hundredths 4.31

Notes for parents:

- Ask your child how is comparing decimals like comparing whole numbers.
- Let your child tell you how he/she compares decimals and fractions such as: 3.2 and 100

Exercise

13

Comparing Decimals

- Lampuring Fractions and Designals

• REMEMBER	● REMEMBER ② LSETS (**) ○ APPLY ♣ PROBLEM SOLVING			☐ Fro	E From the school book	
. Exercite the decimals in the chart. Use the symbols "> , < or =".						
		Ones	Decimal point	Tenths	Hundredths	
a. 0.34 —	0.4					
		Ones	Decimal point	Tenths	Hundredths	
b . 0.45	0.04	Ories		Terrors		
D. U.45	0.04		1			
		Ones	Decimal point	Tenths	Hundredths	
c. 0.23	0.3					
			D-iiit	Tentho	Hundredths	
	a.r.	Ones	Decimal point	Terruns	Hulluleutis	
d. 0.54 —	0.45		*			
			4			
		Ones	Decimal point	Tenths	Hundredths	
e. 0.62 —	0.26	_				
		(0	Decimal point	Touthe	Hundrodths	
		Ones	Decimal point	Tenuis	Hundreddis	
f. 0.80 —	0.09					
		Ones	Decimal point	Tenths	Hundredths	
g. 0.73 —	0.69	_				
3						
					1	
		Ones	Decimal point	Tenths	Hundredths	
h. 0.10	0.1	_	4			

i. 0.49 — 0.04

	Ones	Decimal point	Tenths	Hundredths
I				
Ì			_	

j. 0.27 0.7

Ones	Decimal point	Tenths	Hundredths

Use"> , < or =" to compare.

- a. 0.2 () 0.13
- **d.** 0.30 () 0.3
- g. 0.18 () 0.4
- j. 0.26 () 0.2
- m. 5 () 3.74
- p. 3.4 () 34

- **b**. 0.31 () 0.13
- e. 0.35 (0.3
- h. 0.60 (0.8
- k. 1.37 1.5
- n. 2.31 (2.08
- q. 9.7 9.35

- **c.** 0.34 () 0.04
- **f.** 0.7 () 0.68
- i. 0.07 (0.7
- L 2.31 (1.99
- o. 10.3 (1.03
- r. 4.8 () 0.48

3. Compare the numbers using ">, < or =".

- a. $\frac{24}{100}$ 0.6
- d. 134 100 1.03
- g. (0.23) $\frac{23}{10}$
- j. $\frac{9}{10}$ 0.89
- **m.** = 7 tenths () 0.7

- **b.** 3.72 \bigcirc 3 $\frac{7}{100}$
- **e.** $\frac{200}{100}$ 0.20
 - h. 2.50×5.00
- k. $\frac{4}{10}$
 - n. 3 hundredths () 2 tenths

- c. 5... 6 0.34
- f. $\frac{8}{10}$ 0.79
- i. 3.7 3 17
 - L = 1.04 () 98 tenths
 - o. 3 hundredths

p. 2.07 () 2 Ones, 7 Tenths

4. Circle all the decimal numbers greater than 3.2

2.3 , 3.52 , 3.20 , 3.3 , 2.99 , 3.02 , 3.9

5. Circle all the decimal numbers smaller than 2.3

3.2 , 2.1 , 2.30 , 4.01 , 0.7 , 2.99 , 2.03

6. Adam drank 0.6 liter of juice.

Omar drank $\frac{4}{10}$ liter of juice. Who drank more?

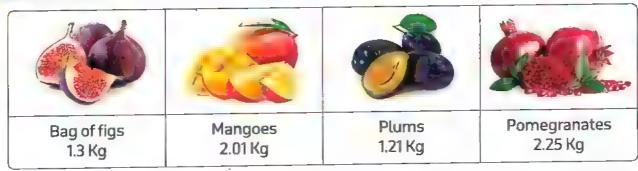
[Cairo - Helwan 22]



Gamal's home is 0.44 kilometer from the school,
 while Hany's home is 6/10 kilometer from the school.
 Who walks the longer distance to the school? [Souhag 22]



- 8. Maisa went to the supermarket and saw two bottles of olive oil. The first one contained 5 liter of olive oil and the second one contained 0.73 liter of olive oil. Which bottle contained more olive oil? How do you know? Use words, numbers or pictures to explain your thinking.
- 9. Use the table to complete the chart and answer the questions.



Fruit	Ones	Decimal Point	Tenths	Hundredths
Figs		*		
Mangoes				
Plums				
Pomegranates		•		

- a. Which item weighs the least?
- b. Which item weighs the most?
- c. Which items weigh more than Plums?
- d. Which items weigh less than Mangoes?

Fill in the blanks to make a true statement.

e. ---->

f. ____<

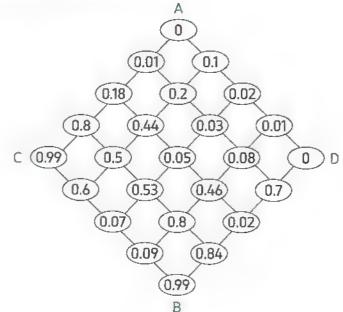
- 10. Adam is plotting what he passes on the way to school on the number line.
 Number the line in tenths using fractions (above the line) and decimals (below the line).
 Then, plot the following on the number line and answer the questions:
 - Omar's house: $\frac{3}{10}$ kilometer.
 - Corner Store: 0.8 kilometer.
 - Street light: $\frac{1}{10}$ kilometer.
 - · Sara's house: 0.6 kilometer.

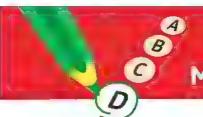
- A brown house: 0.3 kilometer.
- A coffee shop: 0.7 kilometer.
- A yellow house : $\frac{6}{10}$ kilometer.
- · A park: 1.0 kilometer.

- a. Which is further from Adam's house:
 Sara's house or Omar's house?
- **b.** When Adam is walking to school, does he pass the coffee shop or the corner store first?
- c. Who lives in the brown house?
- d. Who lives in the yellow house?
- e. How far is the street light from Omar's house?

Challenge

- 11. a. On the worksheet, trace a path through the maze from A to B. For each step, move to a number of greater value.
 - b. On the worksheet, trace a path through the maze from C to D. For each step, move to a number of lesser value.





Multiple Choice Questions

Choose the correct answer.

[Alex, 23]

3. 2.4
$$2\frac{42}{100}$$

$$\frac{125}{100}$$
 1.3

5.
$$3.74 \bigcirc \frac{374}{100}$$

A. 1.7

C. 1.47

- **B**. 1.5
- D. 1.08

8. Which of the following is smaller than

- 36 100?
 - **A.** $\frac{4}{10}$

B. 0.7

17 tenths

C. =

- **C.** 0.53
- **D.** 0.23

- A. >
- B. =
- C. <

[Alex. 23]

10. 17 hundredths (

- A. > B
- B. <

A. 6

C. 8

B. 7

D. 9

- **12.** 3.07 (
- 3 Ones,7 Tenths
- A. >
- B. <
- **C**. =

- **A**. 0.53 > 0.55
- **B.** 0.03 > 0.3
- **C**. 1.1 > 0.99
- **D**. 4.8 < 4.75

14. Which of the following is worng

- statement?
- (El-Monofia 23)
- **A.** 8.03 = 8.3
- **8.** 5.3 > 5.14
- **C**. 74.8 > 7.48
- **D**, 0.55 > 0.52

15. 76 tenths >

A. 670 tenths

C. 81 tenths

- B. 670 hundredths
- D. 780 hundredths

16. 90 hundredths < -

- **A.** $\frac{19}{100}$
 - <u>91</u> 10

B.
$$\frac{10}{100}$$

D. $\frac{9}{10}$



- Adding Fractions with Denominators 10 and 100 Using Models
- r Adding Two Fractions with Denominators 10 and 100 by Converting Into Equivalent Fractions

Learn 1 Adding using models

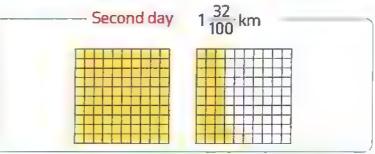
• You can use models to add two fractions with related denominators.

Problem

Andy and some friends went cross-country skating, they covered $2\frac{25}{100}$ kilometers in the first day and $1\frac{32}{100}$ kilometers in the second day. What is the distance that they covered in the two days?

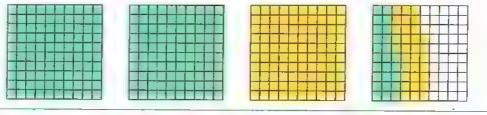
You can use models to find the answer.





- The distance they covered in the two days

$$2\frac{25}{100} + 1\frac{32}{100}$$



So,
$$2\frac{25}{100} + 1\frac{32}{100} = 3\frac{57}{100}$$

Notes for parents:

· Help your child use models to add two fractions with related denominators.

Example 1

Find the result.

a.
$$\frac{3}{10} + \frac{4}{10}$$

d.
$$\frac{3}{10} + \frac{4}{10} + \frac{8}{10}$$

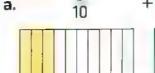
b.
$$\frac{2}{10} + \frac{38}{100}$$

e.
$$2\frac{1}{10} + 1\frac{1}{100}$$

f.
$$\frac{7}{10} + \frac{87}{100}$$

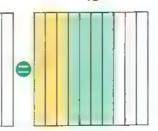
Solution 🕎



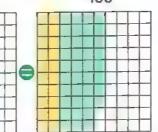




$$\frac{4}{10}$$
 = $\frac{7}{10}$







Notice that

$$\frac{2}{10} = \frac{20}{100}$$

Ċ.





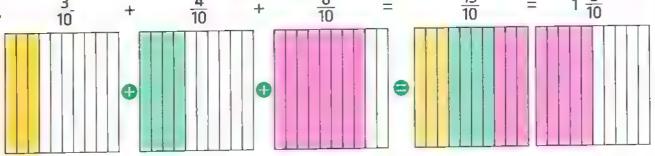
$$1\frac{20}{100} = 1\frac{2}{10}$$

d.



0

$$= 1\frac{5}{10}$$

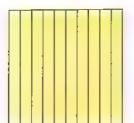


Lessons 10 & 11

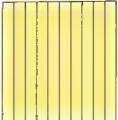
$$2\frac{1}{10}$$

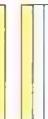
$$1\frac{1}{100}$$

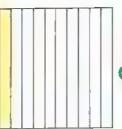
$$2\frac{1}{10}$$
 + $1\frac{1}{100}$ = $3\frac{11}{100}$













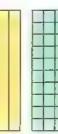


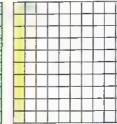






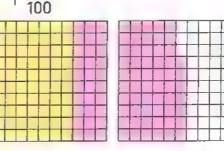








$$1\frac{57}{100}$$



Notice that

$$\frac{7}{10} = \frac{70}{100}$$

your understanding

Find the result using models.

a.
$$\frac{3}{10} + \frac{6}{10}$$



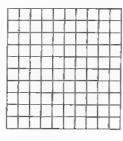


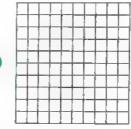


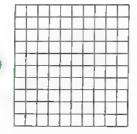




b.
$$\frac{42}{100} + \frac{7}{100}$$







Notes for parents:

• Ask your child how he/she uses models to solve addition problems as $\frac{5}{10} + \frac{30}{100}$

Learn 2 Adding using equivalent fractions Remember that



$$\bullet$$
 $\frac{7}{10}$ + $\frac{13}{100}$ = $\frac{70}{100}$ + $\frac{13}{100}$ = $\frac{83}{100}$

$$\frac{5}{10} + \frac{67}{100} = \frac{50}{100} + \frac{67}{100} = \frac{117}{100} = 1\frac{17}{100}$$

•
$$\frac{50}{100}$$
 is equivalent to $\frac{5}{10}$

Example 2

Record equivalent fractions showing your steps.

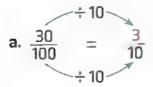
a.
$$\frac{30}{100} = \frac{-}{10}$$

c.
$$5\frac{40}{100} = 5\frac{4}{}$$

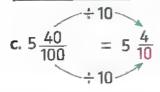
b.
$$\frac{7}{10} = \frac{7}{100}$$

d.
$$\frac{700}{100} = \frac{70}{100}$$

Solution [V]



"by dividing by 10 the quotient is 3"



"by dividing by 10 the quotient is 10"

b.
$$\frac{7}{10} = \frac{70}{100}$$

"by multiplying by 10 the product is 70"

d.
$$\frac{700}{100} = \frac{70}{10}$$

"by dividing by 10 the quotient is 10"

Example 3

Complete to find the result.

a.
$$\frac{34}{100} + \frac{5}{10} = \frac{34}{100} + \frac{1}{100} = \frac{34}{100}$$

b.
$$3\frac{7}{10} + 2\frac{12}{100} = 3\frac{1}{100} + 2\frac{12}{100} = 5\frac{1}{100}$$

Solution [V]

a.
$$\frac{34}{100} + \frac{5}{10} = \frac{34}{100} + \frac{50}{100} = \frac{84}{100}$$

b.
$$3\frac{7}{10} + 2\frac{12}{100} = 3\frac{70}{100} + 2\frac{12}{100} = 5\frac{82}{100}$$





Example 4

Find the result.

a.
$$\frac{3}{10} + \frac{50}{100}$$

b.
$$3 \frac{2}{10} + 4 \frac{3}{100}$$
 [in the decimal form]

c.
$$2\frac{5}{10} + \frac{34}{100} + \frac{61}{100}$$
 [in the decimal form]

Solution [9]

a.
$$\frac{3}{10} + \frac{50}{100} = \frac{30}{100} + \frac{50}{100} = \frac{80}{100}$$

Another Solution:

$$\frac{3}{10} + \frac{50}{100} = \frac{3}{10} + \frac{5}{10} = \frac{8}{10}$$

b.
$$3\frac{2}{10} + 4\frac{3}{100} = 3\frac{20}{100} + 4\frac{3}{100} = 7\frac{23}{100} = 7.23$$

c.
$$2\frac{5}{10} + \frac{34}{100} + \frac{61}{100} = 2\frac{50}{100} + \frac{34}{100} + \frac{61}{100} = 2\frac{145}{100} = 3\frac{45}{100} = 3.45$$



Note that -

The two results are equal $\frac{80}{100} = \frac{8}{10}$



your understanding

Find the result.

a.
$$\frac{1}{10} + \frac{2}{100} =$$

c.
$$\frac{7}{10} + \frac{15}{100} + \frac{22}{100} = \cdots$$

b.
$$3\frac{54}{100} + \frac{6}{10} =$$

(in the decimal form)

d.
$$2\frac{2}{10} + 4\frac{71}{100} =$$

(in the decimal form)



Notes for parents:

 Help your child write an equivalent fraction of denominator 100 to a fraction of denominator 10 and use this technique to add two fractions.

From the school book

1. Write the numerator or denominator to form equivalent fraction.

a.
$$\frac{6}{10} = \frac{-}{100}$$

d.
$$\frac{20}{100} = \frac{2}{100}$$

g.
$$\frac{80}{100} = \frac{8}{100}$$

b.
$$\frac{3}{10} = \frac{--}{100}$$

e.
$$\frac{70}{100} = \frac{7}{-}$$

h.
$$\frac{90}{100} = \frac{-}{10}$$
 [Port Said 23] i. $\frac{-}{10} = \frac{10}{100}$

$$c_{-}\frac{4}{10}=\frac{40}{10}$$

f.
$$\frac{900}{100} = \frac{90}{100}$$

i.
$$\frac{10}{10} = \frac{10}{100}$$

Make equivalent fractions and record how you increased or decreased the numerator and the denominator.

a.
$$\frac{30}{100} = \frac{10}{10}$$

b.
$$\frac{4}{10} = \frac{40}{10}$$

c.
$$\frac{2}{10} = \frac{-}{100}$$

d.
$$\frac{90}{100} = \frac{-}{10}$$

e.
$$\frac{50}{100} = \frac{1}{10}$$

f.
$$1\frac{70}{100} = 1\frac{7}{100}$$

g.
$$\frac{100}{100} = \frac{1}{10}$$

h.
$$\frac{40}{10} = \frac{-}{100}$$

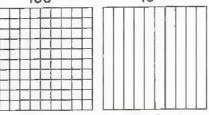
$$i_{1} \frac{600}{100} = \frac{60}{-}$$

j.
$$2\frac{8}{10} = 2\frac{-}{100}$$

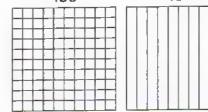
3. Use models to find the result.

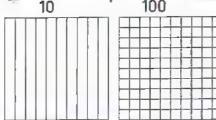


$$\frac{3}{10} =$$



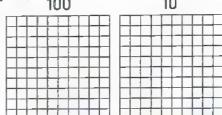


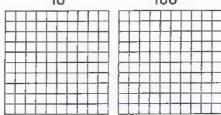


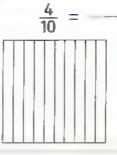








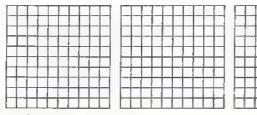


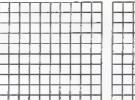




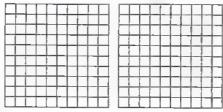
g.
$$-1\frac{4}{10}$$

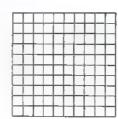
g.
$$-1\frac{4}{10}$$
 + $1\frac{32}{100}$ =















4. Complete to find the result.

a.
$$\square \frac{6}{10} + \frac{23}{100} = \frac{23}{100} + \frac{23}{100} = \frac{23}{100}$$

c.
$$\frac{3}{10} + \frac{8}{100} = \frac{}{100} + \frac{8}{100} =$$

e.
$$\frac{32}{100} + \frac{5}{10} = \frac{32}{100} + \frac{2}{100} = \frac{2}{100}$$

b.
$$2 \frac{7}{10} + \frac{60}{100} = \frac{7}{10} + \frac{10}{10} = \frac{10}{10}$$

d.
$$\frac{23}{100} + \frac{9}{10} = \frac{23}{100} + \frac{1}{100} = -$$

f.
$$\frac{6}{10} + \frac{82}{100} = \frac{82}{100} + \frac{82}{100} = \frac{82}{100}$$

5. Find the result of each of the following.

a.
$$\frac{2}{100} + \frac{5}{10} = \frac{1}{100}$$
 [EL-Menia 23]

c.
$$\frac{6}{10} + \frac{40}{100} = \frac{1}{100}$$
 (Southag 23)

e.
$$\frac{3}{10} + \frac{70}{100} = -$$

g.
$$\frac{7}{10} + \frac{3}{10} + \frac{1}{100} =$$

i.
$$2\frac{3}{10} + 4\frac{5}{100} = \frac{1}{(as a mixed number)}$$

k.
$$\frac{69}{100} + \frac{2}{10} =$$
 [in the decimal form] [Souhag 22]

m.
$$\frac{72}{100} + \frac{54}{100} = \frac{}{\text{[in the decimal form]}}$$

o.
$$4\frac{2}{10} + 5\frac{2}{100} + 2\frac{2}{10} =$$
 [in the decimal form]

b.
$$\frac{4}{10} + \frac{4}{100} = -$$
 [EL-Beheira 23]

d.
$$\frac{2}{10} + \frac{50}{100} =$$
 [Cairo 23]

f.
$$\frac{40}{100} + \frac{5}{10} =$$

h.
$$\frac{2}{10} + \frac{24}{100} + \frac{6}{10} =$$

j.
$$\frac{32}{100} + \frac{31}{100} =$$
 [in the decimal form]

$$L \frac{3}{10} \div \frac{46}{100} =$$
 [in the decimal form] [EL-Kalyoubia 22]

n.
$$12\frac{1}{10} + 4\frac{37}{100} = \frac{1}{[\text{in the decimal form}]}$$

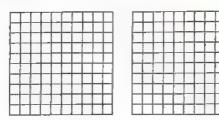
6. Hady has $\frac{5}{10}$ L of juice. He add $\frac{40}{100}$ L of juice to them. How many liters does he have in all?

(El-Beheira 23)

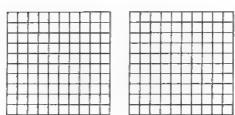
7. Hosam walked $\frac{5}{10}$ kilometer then he walked $\frac{21}{100}$ kilometer. How long did Hosam walk to his home? [Kafr El-Sheikh 23, Assuit 23]

- Hana bought a piece of cloth of length $\frac{8}{10}$ meter and Mona bought another piece of length $\frac{25}{100}$ meter. What is the total length of the two pieces? [Port Said 23]
- 9. Aya had $1\frac{5}{10}$ kilogram of rice. She bought another $1\frac{25}{100}$ kilogram. She used all the amount to cook a meal. **How much rice did she use?** [Alex. 23]
- 10. Abeer had $\frac{8}{10}$ of a meter of fabric. She went to the store and bought another $\frac{25}{100}$ of a meter. How much fabric did she have in all? Fill in the models to show each fraction and then solve.



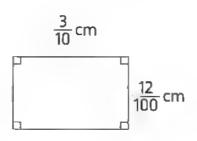


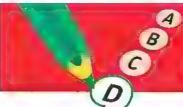
11. Diaa had a water bottle with $\frac{5}{10}$ liter in it. He added it to another bottle that had $\frac{65}{100}$ of a liter. Does he have more than 1 liter? How do you know? Use the models to explain.



Challenge

12. Find the perimeter of the opposite rectangle.





Multiple Choice Questions

Choose the correct answer.

$$\frac{3}{10} + \frac{6}{100} =$$

[El-Beheira 23]

$$\frac{15}{100} + \frac{3}{10} =$$

A.
$$\frac{36}{10}$$

B. 4.5

c.
$$\frac{36}{100}$$

D. $\frac{63}{100}$

C. 0.45

D. 0.018

3.
$$\frac{12}{100} + \frac{3}{10} =$$

[El-Monofia 23]

4.
$$\frac{1}{10} + \frac{11}{100} = \frac{1}{100}$$

[Giza 22]

A.
$$\frac{15}{100}$$

B.
$$\frac{52}{100}$$

c.
$$\frac{42}{100}$$

D.
$$\frac{15}{100}$$

[Ismailia 23]

6.
$$\frac{2}{10} + \frac{3}{10} = \frac{-}{100}$$

B. 90

A. 5

B. 50

C. 5

D. 50

C. 60

D. 500

$$\frac{7}{10} + \frac{8}{10} + \frac{9}{10} =$$

8. $3\frac{17}{100} + 2\frac{5}{10} =$

A. 2.04

B. 0.4

A. $5\frac{67}{100}$

B. 5 $\frac{22}{10}$

C. 2.3

D. 2.4

C. $5\frac{22}{100}$

D. $6\frac{22}{100}$

9.
$$\frac{21}{100} + \frac{7}{10} \bigcirc \frac{71}{100} + \frac{2}{10}$$

10. $\frac{75}{100} + \frac{1}{10} <$ **A.** 85

B. $\frac{9}{10}$

A. >

B. <

 $C_{\cdot} =$

c. $\frac{83}{100}$

D. $\frac{79}{100}$

11. $\frac{3}{10} > -$

A.
$$\frac{15}{100} + \frac{1}{10}$$
 B. $\frac{2}{10} + \frac{1}{10}$

B.
$$\frac{2}{10} + \frac{1}{10}$$

c.
$$\frac{18}{100} + \frac{12}{100}$$
 D. $\frac{5}{10} + \frac{71}{100}$

D.
$$\frac{5}{10} + \frac{71}{100}$$

12. Which of the following is true?

A.
$$\frac{2}{10} + \frac{6}{10} = \frac{8}{20}$$

c.
$$4\frac{2}{100} + 7\frac{3}{10} = 11\frac{5}{100}$$

B.
$$2\frac{3}{10} + 3\frac{22}{100} = 5\frac{52}{100}$$

D.
$$9 \frac{18}{100} + 9 \frac{1}{10} = 18 \frac{19}{100}$$

Unit Ten Assessment



1 Choose the correct answer.

- a. The value of the digit 3 in the number 15.23 is
 - **A.** 0.03
- **B.** 0.30
- **C**. 3

D. 30

- b. 0.07 = "as a fraction."
 - **A.** $\frac{7}{10}$
- **B.** $\frac{7}{100}$
- **c**. $\frac{70}{10}$
- **D.** $\frac{70}{100}$

c. 0.6 0.49

[El-Menia 23]

A. >

B. =

C. <

D. otherwise

- **d.** 7 + 0.1 + 0.05 = ---
 - **A.** 71.5
- **B**. 7.15
- C. 7.51
- **D**, 1.75

- e. Which fraction is equivalent to 0.9?
 - **A.** $\frac{90}{10}$
- B. $\frac{9}{100}$
- C. $\frac{9}{10}$
- **D.** 90

- f. $\frac{35}{100} + \frac{2}{10} <$
 - **A.** $\frac{7}{10}$
- **B.** $\frac{55}{100}$
- **c**. $\frac{3}{10}$
- **D.** $\frac{49}{100}$
- g. The digit in the tenths place in the number 56.79 is _____
 - **A**. 5

B. 6

C. 7

D. 9

2 Complete.

a. $\frac{5}{10} + \frac{25}{100} =$

- **b.** 5.7 =
- tenths

- c. 3.16 in word form is
- d. The place value of the digit 3 in the number 54.32 is
- e. Six and eight hundredths = ———in standard form.
- f. 21.7 = hundredths
- g. $3\frac{7}{10}$ is equivalent to ——— as decimal.

(Souhag 23)

h. 5 tens and 3 tenths =

Choose the correct answer.

- a. 0.07 + 0.2 = ----
 - A. 72 tenths
- B. 27 tenths
- C. 72 hundredths
- D. 27 hundredths

- **b.** $2\frac{1}{10} + 3\frac{1}{100} =$
 - A. 5.2

- **B.** 5.12
- C. 5.11

D. 5.22

- c. 7.2 >
 - **A.** 7.3

- B. 7.16
- C. 7.20
- D. 7.29

- - **A.** $\frac{29}{100}$
- **B.** $\frac{209}{100}$
- **c.** $\frac{47}{100}$
- **D.** $\frac{49}{100}$

- e. 0.34 0.4
 - A. >

B. <

C. =

- **f.** $\frac{810}{100} = \frac{10}{10}$
 - A. 8100
- B. 810
- **C**. 81

D. 8.1

- g. 1 $\frac{40}{100}$ = ----
 - A. 140
- B. 14

C. 1.4

D. 1.04

4 Answer the following.

- 1. Amira bought 1.5 kilograms of tomatoes. Nada bought 1.6 kilograms of tomatoes.
- Who bought less?
- 2. Adam drank 0.6 liter of juice. Omar drank $\frac{4}{10}$ liter of juice. Who drank more? [Assuit 23]
- Samy has $\frac{5}{10}$ liters of orange juice and $\frac{35}{100}$ liters of apple juice. How many liters does samy have in all?
- 4. Maha wrote 7.03 in word form as seven and 3 tenths
- Is Maha right or wrong? If she is wrong correct her mistake.

THEME THREE

Fracions Ladinas, នូកៅ Physiophilional ខែងដើមស្រីកិចិន

EN S

Data with Fractions

a Extraoph à :

Did you know?!

7

-114 _ 1 82) \ de 1 Cen de la 11 11 11 15 5							
Winner	Egypt	Cameroon	Ghana	Nigeria	Algeria		
Number of times	7	5	4	3	2		

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Creating and Analyzing Graphs



	1111	
Lesson 1	Different Graphs	 Students will distinguish between different types of graphs. Students will explain the difference between bar graphs and double bar graphs. Students will explain when it is appropriate to use double bar graphs.
Lessons 2&3	Plotting Along	 Students will explain why data might include fractions. Students will construct a line plot using data with fractions. Students will analyze a line plot using data with fractions.
	Breaking the Bar	 Students will construct a bar graph using data with fractions. Students will analyze a bar graph using data with fractions. Students will construct a double bar graph using data with fractions. Students will analyze a double bar graph using data with fractions.

1

Different Graphs

Remember

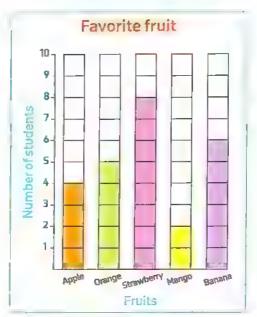
You have learned before that data can be represented by more than one way.

For example:

These data about students' favorite fruit.

Sandra represented the following data by a bar graph.

avortende				
Fruits	Number of students			
Apple	4			
Orange	5			
Strawberry	8			
Mango	2			
Banana	6			



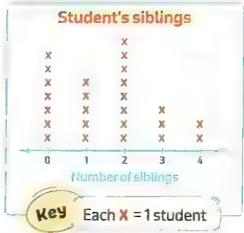
A bar graph is used to compare data.

Another example:

These data about siblings (brothers and sisters)
 Amgad represented the following

data by a line plot.

Siblings	Number of students
0	7
1	5
2	8
3	3
4	2



A line plot compares data by showing clusters of information.

Notes for parents:

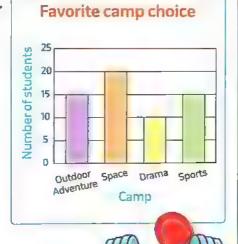
Remind your child how he/she can represent data by a bar graph and a line plot.



Example

Observe the given graph and answer the following questions.

- a. Which camp do most students prefer?
- b. Which camp was chosen by the fewest students?
- c. How many students chose space camp?
- d. How many more students chose space camp than sports camp?
- e. Which two camps were chosen by the same number of students?



Solution 🕎

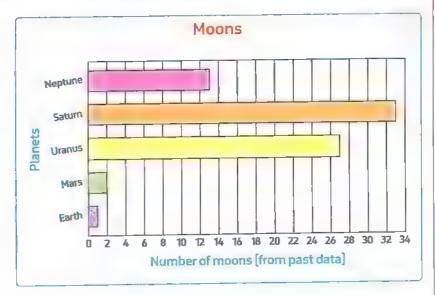
- a. Space.
- c. 20 students.
- e. Outdoor adventure and sports.

- b. Drama.
- **d.** 20 15 = 5 students.

Example 2

Observe the given graph and answer the following questions.

- a. Which plant has the lowest number of moons?
- b. What is the number of moons around Mars?
- c. Which planet has less moons than Neptune but more than Earth?
- d. Which planet has more moons than Mars but fewer than Uranus?



Solution [V



- a. Earth.
- c. Mars.

- b. 2 moons.
- d. Neptune.

Ask your child to review the elements of the bar graph and to point to each part.



Learn 1 Double bar graph

A double bar graph uses two different-colored or shaded bars to compare two similar sets of data that can be counted.

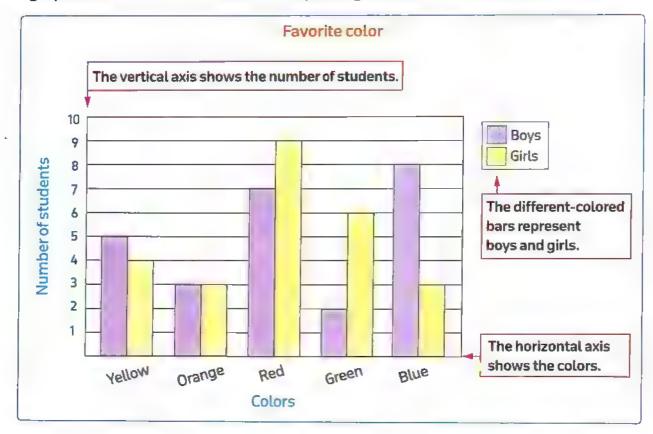
For example:

The following survey shows student's favorite color for 25 boys and 25 girls.

The data is organized in a table.

Favorite color						
Colors	Boys	Girls				
Yellow	5	4				
Orange	3	3				
Red	7	9				
Green	2	6				
Blue	8	3				

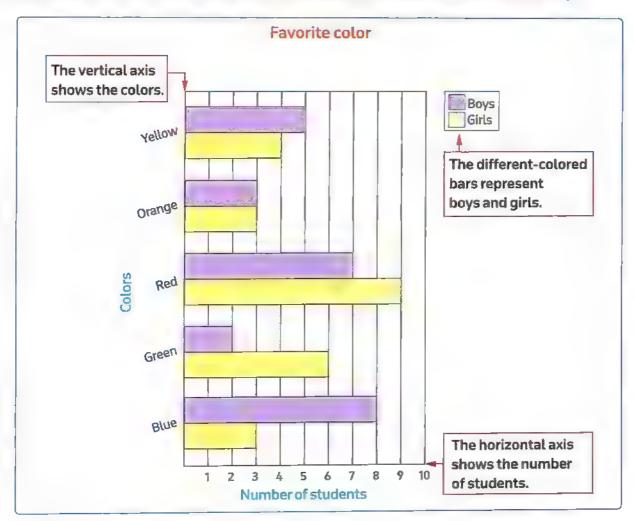
The graph below shows the number of boys and girls voted for their favorite color.



Notes for parents:

Let your child explain the difference between bar graph and double bar graph.

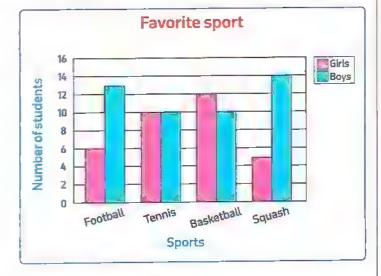
The same data can be converted from the vertical format into horizontal format.



Example 3

Observe the given graph and answer the following questions.

- a. Which is the most preferred sport of the girls?
- b. Which is the most preferred sport of the boys?
- c. How many girls like squash?
- d. Which sport is liked by 10 girls?
- e. How many students like basketball?



Solution V



- a. Basketball.
- b. Squash.

c. 5 girls.

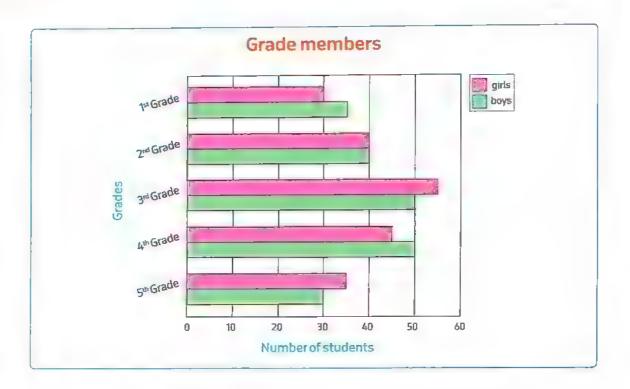
d. Tennis.

e. 12 + 10 = 22 students.

[·] Let your child explain when it is appropriate to use double bar graphs.

Example 4

Observe the given graph and answer the questions below.



- a. What is the number of boys in 4th grade?
- b. What is the number of students in 3rd grade?
- c. What is the difference between the number of boys in 4th grade and in 2nd grade?
- d. Which grade has the lowest number of boys?
- e. Which grade has the highest number of girls?
- f. Which grade has the same number of boys and girls?

Solution [



- a. 50 boys.
- **c.** 50 40 = 10 boys.
- e. 3rd Grade

- **b.** 50 + 55 = 105 students.
- d. 5th Grade
- f. 2nd Grade

Notes for parents:

· Help your child answer the questions about data.

Learn 2 Choose an appropriate graph

The type of graph used to display data depends upon the type of information you want to show.

The best graph to represent the given data

Ballouph



Bar graph is used to compare things between different groups or to track change over large periods of time with one group surveyed.

Examples of data can be represented by bar graph:

- Favorite animal or pet.
- Favorite color or sport.
- Favorite food or fruit.
- Favorite season.
- Favorite subject.
- Student marks.

diversion



Line plot is used to show the frequency of data on a number line.

Examples of data can be represented by line plot:

- Data involving measurements such as:
- length, time, distance, height, or weight.
- Number of siblings.
- Number of pets.

Deuble Ball Oraph



Double bar graph is used to display two sets of data on the same graph using two different colors to compare the two categories.

Examples of data can be represented by double bar graph:

- Favorite color between boys and girls.
- Favorite food between boys and girls.
- Students marks of two subjects.
- Highest and lowest temperature of some cities.
- Saved amounts during months between two persons.

The four main elements to graph the data:

- 1. Title.
- 2. Labels for each axis.
- Scale with increments accurately marked.
- A key if needed.

[·] Help your child distinguish between different types of graph.

Example 5

Choose the best answer.

a. Sara collected data about the number of books each child read between two months May and June.

Which type of graph would best to display these data?

- A. Bar graph
- B. Pictograph
- C. Double bar graph
- D. Line plot
- b. Amir collected data about the number of family members for each child at his class. Which type of graph would best to display these data?
 - A. Bar graph
- B. Pictograph
- C. Double bar graph
- D. Line plot

Solution [V]



a. Double bar graph

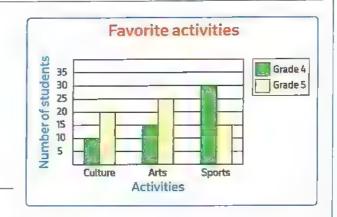
b. Line plot



your understanding

- 1. Which type of graph would be best to represent the highest and the lowest temperature degrees in Cairo for 5 days?
 - A. Bar graph
- B. Pictograph
- C. Double bar graph
- D. Line plot

- 2. The following double bar graph shows the favorite activities for grade 4 and grade 5 in a primary school. Notice the double bar graph and answer the questions.
 - a. Which activity is the most preferred of grade 4?
 - b. Which activity is the most preferred of grade 5?



- c. How many students chose arts in grade 5?
- d. Which activity is chosen by 40 students?
- e. Calculate the difference between the number of students of grade 4 and grade 5 in sports activities.

Notes for parents:

· Make sure that your child understand that double bar graphs are used to make comparisons between and among sets of data.



Different Graphs

UNDERSTANDAPPUY

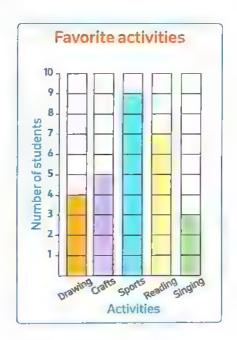
From the school book

1. The following graph shows students' votes for their favorite activities.

Complete the following table. Then, answer the questions.

	Favorite activities					
Activity	Drawing Crafts Sports Reading Singing					
Number of						
students						

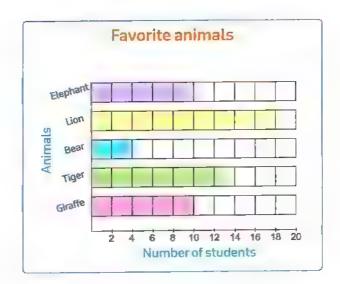
- a. Which activity did the most students prefer?
- b. Which activity was chosen by the fewest students?
- c. How many students chose reading?
- d. How many more students chose sports than crafts?
- e. Which two activities their sum equals the number of students chose sports?



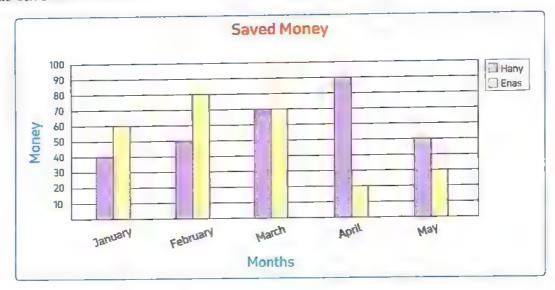
2. The following graph shows students' votes for their favorite animals.

Answer the following questions.

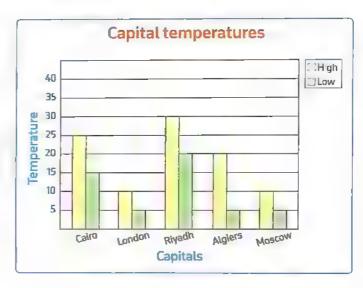
- a. Which animal is liked the most?
- b. Which animal is liked the least?
- c. How many students liked tiger?
- d. Which two animals were liked by the same number of students?
- e. How many more students liked tiger than bear?



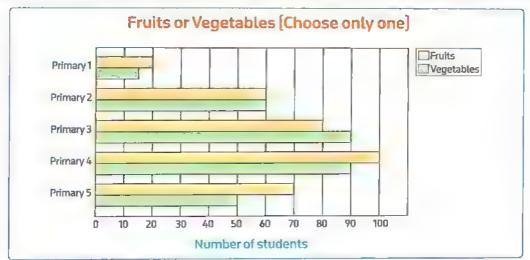
3. The following double bar graph shows the sum of money in pounds which Hany and Enas Saved in 5 consecutive months. Observe the graph, then answer the questions.



- a. What is the highest amount did Hany save? Which month?
- b. What is the highest amount did Enas save? Which month?
- c. What is the total saved amount in February?
- d. What is the difference between their amounts in April?
- e. What is the total amount did Hany save in all?
- f. What is the total amount did Enas save in all?
- g. Which month did Hany and Enas save the same amount?
- h. Who saved the most? Who saved the least?
- 4. The following double bar graph shows the highest and lowest temperature degrees in some of the world's capitals in a day. Observe the graph, then answer the questions.
 - a. Which capital had the highest temperature?
 - **b.** What is the lowest temperature in Cairo?
 - c. Calculate the difference between the highest and lowest temperature in Algiers.
 - d. Calculate the difference between the highest temperature between Cairo and Moscow.



5. Use the double bar graph to answer the questions about what students in each grade prefer.



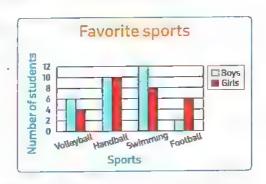
- a. Which grade has the same number of students who like fruits and vegetables?
- b. Which grade likes vegetables more than fruits?

[Alex, 23]

- c. How many more students in Primary 4 like fruits versus students in Primary 1?
- d. How many students like fruits in both Primary 1 and 2?
- e. How many more students in Primary 2 and Primary 3 like vegetables than in Primary 4 and Primary 5?
- f. How many total students were surveyed?
- g. Why is this a good data set to use a double bar graph?
- 6. By using the opposite graph.

(Luxor 23, Souhag 23)

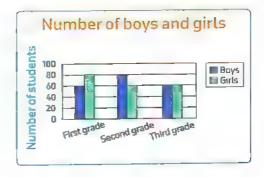
- a. How many boys prefer swimming?
- _____
- b. How many girls prefer volleyball?



Use the following double bars graph to answer the questions.

[Giza 23]

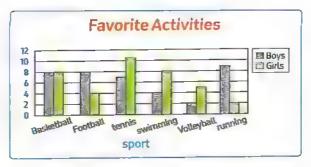
- a. What is the number of boys in first grade?
- b. What is the number of girls in third grade?
- c. In which grade the number of boys is equal to the number of girls?



8. The following data shows the favorite activities between boys and girls, study the graph,

then answer the questions. [Cairo 23]

- a. How many boys liked football?
- b. How many girls liked swimming?-
- c. Which sports shows the same number of boys and girls?———



9. Single or Double? Look at each table and the data collected. For each table, decide if the data could be presented in a double bar graph. Record your answer and your reasoning.

Table 1 Minimum and Maximum Monthly Temperature in Cairo.

Month	Minimum	Maximum
January	9	19
February	10	20
March	12	24
April	15	28

Could this data be represented in a double bar graph?

Table 2 Favorite sports.

Sport	Number of students
Soccer	48
Basketball	24
Swimming	32
Gymnastics	12

Could this data be represented in a double bar graph?

Table 3 Favorite foods.

Food	Boys	Girls
Baklawa	25	18
Fteer Meshaltet	17	12
Ful Medames	20	26
Tamiya	11	16

Could this data be represented in a double bar graph?

10. Answer the following questions.

a. Write three different ways for representing data.

[El-Monofia 23]

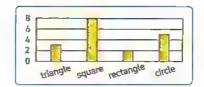
[1]

[2]

[3]

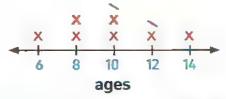
b. From the opposite graph: Find the number of squares.

(Giza 23)



c. By using the opposite line plot, find the number of children whose ages are 10 years old.

[Aswan 23]



Key Each?

Each x = stands for 2 childern

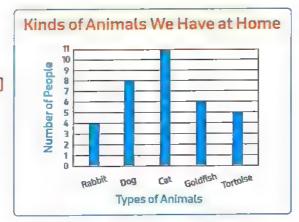
d. The table shows the internet usage for four friends in hour.

Who use the internet the least time? [Alex. 23]

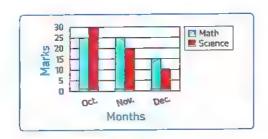
Name	Saly	Fady	Amira	Ali
No. of hours	1/4	12	1/3	1

e. In the following bar graph:
Find the number of people who like dog.

[Port Said 23]



f. The following graph shows Ali's marks in Math and Science over three months. In which month does Ali get the greatest mark in Science? [Alex. 23]



Multiple Choice Questions

40

20

Choose the correct answer.

- 1. The opposite graph shows mark for four students, which student got lowest mark?
- (Ismailia 23)

- A. Farida
- C. Alaa

B. Samah

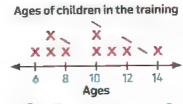
Fanda Sameh Alaa Yara

D. Yara

- The opposite graph shows a
 - A. line plot

[Alex. 23]

- B. double bar
- C. pictograph
- D. bar graph

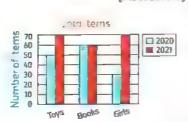




3. The opposite graph shows

[Aswan 23]

- A. pictograph
- **B**. line plot
- C. bar graph
- D. double bar graph



4. The following table can be represent

by ——

(El-Beheira 23)

Subject	Arabic	Math	Science	English
Boys	30	35	39	40
Girls	25	40	39	30

- A. line plot
- B. bar graph
- C. pictograph
- D. double bar graph

5. Which type graphs is suitable for this data? [El-Monofia 23]

Name Ali Ola Nora
Age 13 17 15

- A. double bar graph
- **B.** line plot
- C. bar graph

- 6. The horizontal and vertical lines of graph are called [El-Monofia 23, Alex. 23]
 - A. titles
 - B. axes
 - C. keys
 - D. number of sets
- 7. The number of girls in handball equals?

A. 4

B. 10

C. 7

D. 5



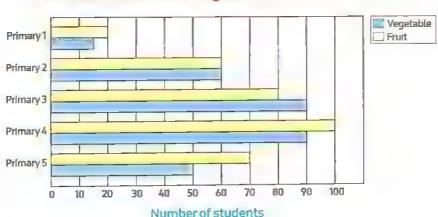
- 8. Which of the following can be represented
 - by a line plot?

[El-Monofia 23]

- A. Our favorite movie
- B. Our favorite animal
- C. Our height
- D. Our favorite food

9. From the following graph:

Favourite fruits and vegetables for the students



a. Which grade like vegetables more than fruits?

[Giza 22, Port Said 23]

- A. Primary 1
- B. Primary 2
- C. Primary 3
- D. Primary 4
- b. What is the total number of students who like vegetables and fruits in grade 4?

[El-Beheira 23]

A. 30

B. 120

C. 170

D. 190

- Which of the following can be represent by double bar graph? [Souhag 23]
 - A. Sleeping hours every night
 - B. Favorite food
 - C. Maximum and minimum temperature in different cities.
 - D. Length of 5 things on your desk.

- **11.** Which of the following can be represented by a double bar graph? [El-Beheira 23]
 - A. Favourite animal
 - B. Our shoe sizes
 - C. Marks of friends in Math and Arabic
 - D. Favourite color
- 12. is the representation of data through individual columns. [Alex. 23]
 - A. Bar graph
 - B. Double bar graph
 - C. Pictograph
 - D. Line plot

hours for Ahmed and Hassan in one week you can use _____ [Ismall

Week you can ase

(Ismailia 23)

- A. line plot
- **B.** double bar
- C. pictograph
- **D**. bar line

- 14. When the data is numbers, use to represent on the number line. [Aswan 23]
 - A. bar graph
 - B. double bar graph
 - C. pictograph
 - D. line plot

15. To compare between rainfall in Egypt in the two years 2022 and 2023,

we use

[Kafr El-Sheikh 23]

- A. pictograph
- B. line plot graph
- C. double bar graph
- D. bar graph

Lessons

- Plotting Along
- Breaking the Bar

Learn 1 Line plot with fractions

A line plot is a graph that shows the frequency of data along a number line, a line plot is used to represent and compare data.

Farid collected data about the number of hours spent doing homework of his friends to the nearest $\frac{1}{2}$ of hour and the data was as follows:

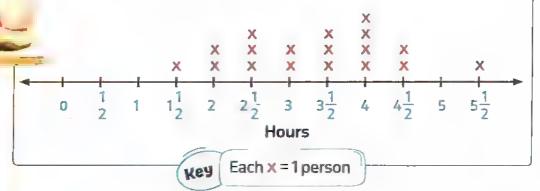
4	2	3 1/2	4 1/2	3	3 1/2
2 1/2	4	1 1/2	2	2 1 2	$5\frac{1}{2}$
4	3	2 1 2	4 1/2	4	3 1/2

Hint These

These data contains fractions, it can be represented by a line plot using a number line its interval increases by $\frac{1}{2}$.

Farid represented these data by a line plot.

Hours Spent Doing Homework





Line plot often used when the data shows numbers or measurements such as:

- Lengths.
- Number of members.
- Number of siblings.

- Hours.
- Weights.
- Number of pets.



· Help your child construct a line plot using data with fractions.



Example 1

Amgad has a farm, and just received a shipment of young tomato plants. He wanted to get a clear view of the lengths of plants he received to the nearest $\frac{1}{4}$ dm.

He recorded the lengths in dm as follows:

	3 3 4	4 1/4	3 3/4	4 1/2	3 ¹ 2	4
4 1/4	4 1/2	4	3 1/2	4 1/2	4 1/4	3 3/4
3 1/2	4 1/4	3 3/4	4 1/2	4 1/4	3	4 1/4

Represent these data by a line plot, then answer the following questions.

- a. Which plant height occurred most often?
- b. Which heights were recorded for the same number of plants?
- c. How many plants did Amgad measure all together?
- d. What was the height of each of the tallest and the shortest plants?
- e. How many total plants measured 4 dm to $4\frac{1}{2}$ dm?
- f. How many more plants were $4\frac{1}{4}$ dm than $3\frac{1}{2}$ dm?

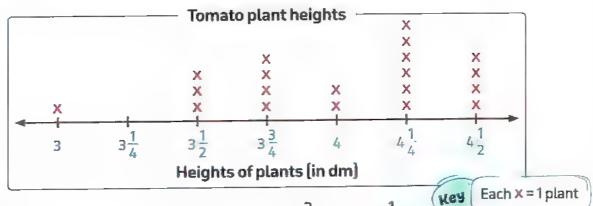
Solution [V



To represent these data by a line plot follow the steps.

Step 1: Draw a number line. The shortest length is 3 dm and the tallest length - is $4\frac{1}{2}$ dm, So you can use a scale of 3 to $4\frac{1}{2}$ and an interval of $\frac{1}{4}$, then write a title.

Step 2: Put an "X" above the number that represents the length of each plant.



- a. $4\frac{1}{4}$ dm
- c. 20 plants.
- e. 2+6+4=12 plants.

- **b.** $3\frac{3}{4}$ dm and $4\frac{1}{2}$ dm
- d. $4\frac{1}{2}$ dm and 3 dm
- f. 6-3=3 plants.

[·] Ask your child to think when fractions could be used in a graph.

Learn 2 Construct a double bar graph

Double bar graph helps to compare or present more than one kind of information, situations, or events instead of just one by using bars.

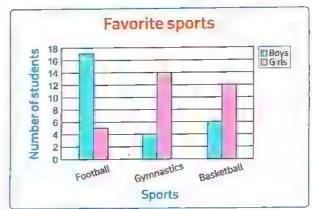
Here is a table of data shows the favorite sports for boys and girls.

٠,-		y .
Sport	Boys	Girls
Football	17	5
Gymnastics	4	14
Basketball	6	12

You can follow these steps to represent the above data, the graph will be as follows :

How to construct a double bar graph?

- 1. Decide what title you will give the graph.
- 2. Decide if you want horizontal or vertical bars.
- 3. Choose a suitable scale.
- 4. Put labels on the axes.
- 5. Draw the bars.
- 6. Give two different colors for differentiating the two bars.



Hint

Most data contains even numbers. So, scale of 2 is more suitable.

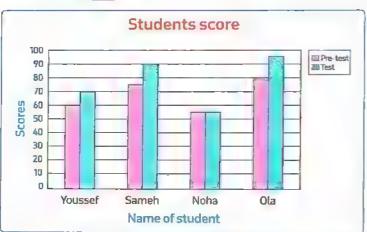
Example 2

The opposite table shows the scores obtained by the four friends Youssef, Sameh, Noha and Ola in the pre-test and test.

Represent these data by double bar graph.

<u></u>							
Name of student	Pre-test	Test					
Youssef	60	70					
Sameh	75	90					
Noha	55	55					
Ola	80	95					

Solution 🅎





Most data contains big numbers. So, scale of 10 is more suitable.

Notes for parents:

• Help your child choose the suitable scale when he/she construct a double bar graph.

Example 3

The following data shows the walking distance to the nearest $\frac{1}{4}$ kilometer of four friends in two different days.

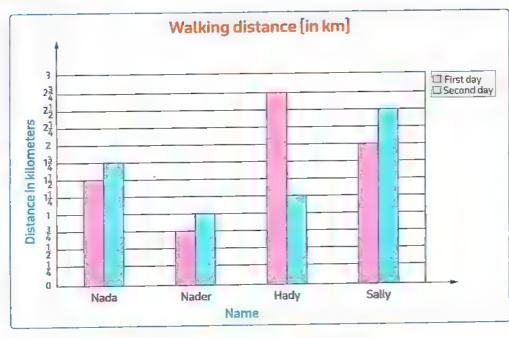
Name	Nada	Nader	Hady	Sally
First day	1 1 2	3 4	$2\frac{3}{4}$	2
Second day	1 3 4	1	1 1/4	2 1/2

Represent this data by using a double bar graph, then answer the following questions.

- a. Who walked the longest distance in first day?
- b. Who walked the shortest distance in second day?
- c. What is the difference between the longest distance and the shortest distance in second day?
- d. Who walked the same distance as Nada in the second day in the two days?

Solution [V]





Hint.

Most data contains fractions. So, scale of $\frac{1}{4}$ is more suitable.

- a. Hady
- **c.** $2\frac{1}{2} 1 = 1\frac{1}{2}$ kilometers
- b. Nader
- d. Nader $\left(\frac{3}{4}+1=1\frac{3}{4}\text{ kilometers}\right)$

Help your child to construct a double bar graph using data with fractions.





your understanding

1. Use the following data to make a line plot.

6 1/2	7	5	7	7	6	6 1/2	7 1/2	5 1/2	6 1/2
5 1/2	6	6 1/2	6 1/2	5 1/2	7	5	6	6 1/2	$5\frac{1}{2}$

2. The following data shows the marks of three students in Mathematics and Science tests and full mark is 10.

Represent these data using double bar graph.

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Name Subject	Andy	Reem	Nour
Mathematics	7	6	5 1/2
Science	7 1/2	6 1/2	8

Notes for parents :

 Ask your child why a double bar graph would be a good choice to show the data in the second exercise in this page.

Exercise on lessons 283

- Plotting Along
- Breaking the Bar

- PROBLEM SOLVING
- From the school book

First: Line plot

1. Use the following data to create a line plot, then answer the questions. a. 11 kg; 12 $\frac{1}{4}$ kg; 11 $\frac{3}{4}$ kg; 11 $\frac{1}{2}$ kg; 12 kg; 11 $\frac{1}{2}$ kg; 11 $\frac{1}{4}$ kg; 11 $\frac{1}{4}$ kg; 11 $\frac{1}{4}$ kg; 12 kg



- Give the line plot a title.
- 2. What is the most common record?
- 3. What is the least common records?

b.
$$3m; 3\frac{1}{3}m; 4\frac{1}{3}m; 3\frac{2}{3}m; 3\frac{1}{3}m; 4\frac{2}{3}m; 4\frac{1}{3}m; 3m; 3\frac{1}{3}m; 4\frac{2}{3}m.$$



- 1. Give the line plot a title.
- 2. What is the most common record?
- 3. What is the least common record?
- 2. Look at the data and think about what scale you will use. How will you organize the fraction data? Where will your number line begin and end? Create a line plot for the data.

$$1\frac{1}{2}$$
 km; $2\frac{3}{4}$ km; 3 km; $2\frac{3}{4}$ km; $2\frac{3}{4}$ km;

$$3\frac{3}{4}$$
 km; 3 km; $3\frac{1}{2}$ km; $2\frac{1}{2}$ km; $3\frac{1}{2}$ km; 1 km

- 3. The following data shows the ages of nursery's kids to the nearest $\frac{1}{2}$ of year.
- Represent the data on the line plot. Give the line plot a title.

1	5 <u>1</u>	$2\frac{1}{2}$	2	$3\frac{1}{2}$	1	3
2	4	1	5 1/2	2	$3\frac{1}{2}$	$2\frac{1}{2}$

Answer the questions.

- a. How many children were 1 year old?
- b. How many children were 4 years old?
- c. How many children were 2 years old to 3 $\frac{1}{2}$ years old?
- d. How many more children were 2 years old than 4 years old?
- e. How many children were at the nursery in all?
- 4. The following data shows the marks of mathematics test for students. Create a line plot for the given data. Use the line plot to answer the following questions.

18	19	17	18 1/2	20	16 1/2	18 1/2	19 1/2	17 1/2	20	17	18 1 2
17	17 $\frac{1}{2}$	18 1/2	17 1/2	19	18 1/2	17 1/2	17	$18\frac{1}{2}$	20	18	$17\frac{1}{2}$



- a. How many students are in all?
- b. What is the least mark? What is the highest mark?
- c. What is the most common mark did the students get?
- d. How many students got 18 marks or more?
- e. How many more students got 17 $\frac{1}{2}$ marks than 20 marks?
- f. Write one statement about the data.
- 5. Going the Distance. These data shows the distance from home to school for students.

 The data are given in kilometers. Create a line plot for the given data. Use your line plot to answer the questions.

 [Souhag 22, Cairo-Heliopolis 22]

Hint

The title is already written. Remember to label your number line and include a key.

$$\frac{3}{5}$$
 km; $\frac{2}{5}$ km; $\frac{5}{5}$ km; $\frac{4}{5}$ km; $\frac{2}{5}$ km; $\frac{4}{5}$ km; $\frac{4}{5}$ km; $\frac{4}{5}$ km; $\frac{4}{5}$ km; $\frac{1}{5}$ km

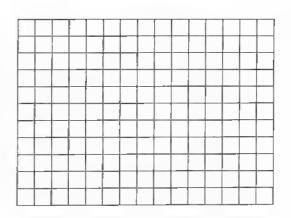
- a. How many students were surveyed?
- b. What is the shortest distance any student lives from school?
- c. What is the farthest distance any student lives from school?
- d. What is the most common distance students live from school?
- e. What are the least common distances students live from school?
- f. Write one statement about the data.

Second: Breaking the bar

6. The following data shows the internet usage for four friends. The data are given to the nearest $\frac{1}{4}$ of hour. Use the following table to complete the bar graph, then answer the questions.

Name	Samer	Amira	Islam	Enas
Number of hours	3 4	2 1/4	1 1/2	2

- a. Who uses the internet the most time?
- b. Who uses the internet the least time?
- c. What is the difference between Enas and Samer?
- d. What is the total internet usage of Amira and Samer?
- e. How many more hours did Enas use than Islam?



7. Kamal recorded the lengths of two types of plants in four days as follow:

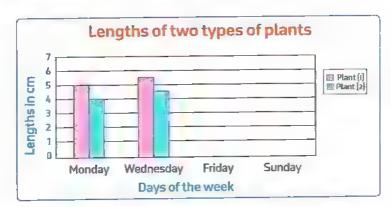
	Mon.	Wed.	Fri.	Sun.
Plant[1]	5 cm	$5\frac{2}{5}$ cm	6 cm	$6\frac{1}{5}$ cm
Plant[2]	4 cm	4 2/5 cm	4 ³ / ₅ cm	5 cm

[Qena 22]

(Cairo 22)

[Middle Zone Cairo 22]

a. Use the above data to complete the following graph:



b. In plant [1], what's the amount of increasing in its length from Monday to Sunday?

8. Marwan made a table to show the marks for his team, the Goldenrods, and the opposing team in the first three exams. What type of graph would be most appropriate for Marwan to use to display these data? Explain.

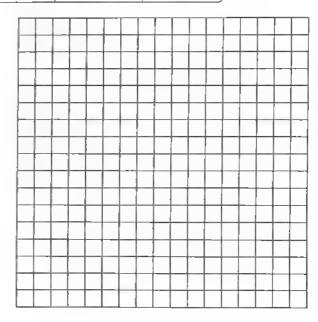
Marks Scored in Each Exam								
Team	Exam 1	Exam 2	Exam 3					
Goldenrods	30 1/2	31 1/4	31 1/2					
Opponents	32 1/4	30 1/2	31 1 4					

Represent these data by this type of graph, then answer the following questions.

- a. Which team has got the highest score in Exam 3?
- b. Which team has got the lowest score in Exam 1?
- c. What is the difference between the highest scores in Exam 3 and Exam 1?
- d. What is the sum of the highest score in Exam 3 and lowest score in Exam 2?
- The following data shows the walking distance in a week by two friends Bassem and Amal. The data are given in kilometers. Represent these data by a double bar graph showing the week's data. Then use the graph to answer the following questions.

Days Name	Sunday	Monday	Tuesday	Wednesday	Thursday
Bassem	2 1/4	1 1/2	3 3/4	3	· 3 ½
Amal	1 3/4	1 1/2	2 1 2	3 1/4	4

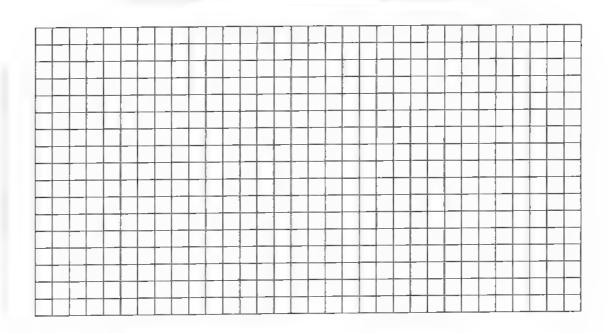
- Which day Bassem walked the longest distance?
- b. Which day Amal walked the shortest distance?
- c. On which day did Bassem and Amal's total distance equals 4 kilometers?
- d. How many total kilometers did Amal walk in all?
- e. How many total kilometers did Bassem walk in all?
- f. On which day did Bassem walk twice as far as he did in Monday?



10. Rolling, Rolling Part 1. Omar and Malek conducted an experiment. They wanted to see how far their friends could roll a heavy ball. They drew a starting line in the dirt and asked six friends to roll a 10 kilograms ball as far as they could from the starting line. They measured the distance in meters to the nearest $\frac{1}{4}$ meter and record their data in a table.

Student	Distance for 10 kg Ball (in m)
Rana	$\frac{3}{4}$ m
Salah	1 1/2 m
Tahani	1 1/4 m
Ziad	2 1/4 m
Farouk	1 ³ / ₄ m
Walid	2 1/2 m

Create a bar graph that shows Omar and Malek's data. Remember to include all the elements of a bar graph.



Now, write two questions about the bar graph you created and then answer them.

Question 1:

Question 2:

 Rolling, Rolling, Rolling Part 2. Omar and Malek decided to see how far the same students could roll an 8-kilograms ball and compare the data they collect to the data for the 10-kilograms ball.

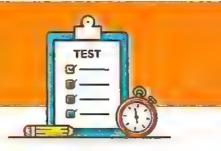
Student	Distance for 10 kg Ball (in m)	Distance for 8 kg Ball (in m)
Rana	3/4 m	1 1/4 m
Salah	1 ½ m	2 m
Tahani	1 1/4 m	2 m
Ziad	2 1/4 m	3 1/2 m
Farouk	1 3 m	2 1 m
Walid	2 1/2 m	3 1/4 m

a. Add this new data to your graph from Part 1, so that you can compare each student's two rolls.

When finished, answer the following questions about the double bar graph data.

- **b.** Which students rolled the 8 kilograms ball exact $\frac{1}{2}$ a meter farther than they rolled the 10 kilograms ball?
- c. Which student had the biggest difference between the 10 kilograms ball roll and the 8 kilograms ball roll?
- d. What is the sum of Ziad and Farouk's 8 kilograms rolls?
- Looking at the data, what could you infer would happen if the students rolled a 6 kilograms ball. Explain your reasoning.
- f. Pick two students and find the total distance of both of their rolls [10 kilograms and 8 kilograms].

Unit Eleven Assessment



Choose the correct answer.

a. Which of the following can be represented by a line plot?

A. Our favorite sports.

B. Our favorite colors.

C. Our weights.

D. Our favorite food.

b. Which of the following can be represented by a double bar graph?

Favorite animal.

B. Marks of friends in Math.

C. Marks of friends in Math and Arabic.

D. Our heights.

c. To represent the number of walking hours for Ahmed and Hassan in one week you can use

A. line plot.

B. pictograph.

C. double bar graph.

D. bar graph.

d. Maged collected some data about the favorite pet of his friends. Which kind of representing data is the best?

A. Line plot.

B. Double bar graph. C. Bar graph.

e. In the opposite figure, the number which is the most repeated is

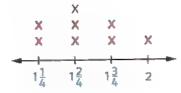
[Alex. 23]

A. 1

B. $1\frac{3}{4}$

c. $1\frac{2}{4}$

D. $1\frac{1}{4}$



f. Which type of graph is suitable for these data?

(Souhag 23)

A. Line plot

B. Bar graph

C. Double bar

D. Otherwise

Name	Name Ahmed		Ola	Ali	
Age	13	17	15	10	

g. Which type of graph is suitable for these data?

Subject Math		English	English Arabic		Art
Hany	20	19	15	18	17
Mona	17	20	19	20	15

A. Double bar graph.

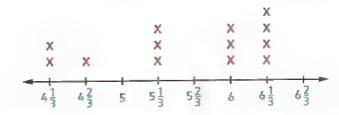
B. Line plot.

C. Bar graph.

First : Complete :

a. From the following line plot, the number which is the most repreated is

(Ismailia 23)



- b. The represent graphically for comparing heights and lowest temperature degrees for [El-Beheira 23] some cities is
- c. The type of graph which is suitable to represent the opposite data is

Name Samy		Omar	Karim	
Age	28	33	17	

(Kafr El-Sheikh 23)

d. The favorite fast food of boys and girls represents graphically by using

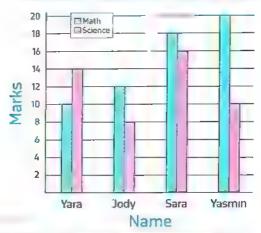
[Kafr El-Sheikh 23]

Second: The opposite graph shows the marks of four students in Math and Science tests.

Complete from (a) to (d).

- a. The student who got the highest mark in Math is
- b. The difference between the Math mark and Science mark of Yasmin is
- c. The student who got the lowest mark in Science is:
- d. The total marks of Math and Science of Sara is

Markes of Math and Science tests



Choose the correct answer.

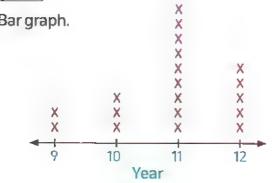
a. Which type of graph is suitable to represent these data?

Number of hours	0	1	2	3	4	5
Number of students	2	4	10	11	3	1

The age of students

X

- A. Double bar graph.
- B. Line plot.
- C. Bar graph.
- b. In the opposite line plot, if it represents the ages of 40 students in grade 4, then each X stands for student(s).



- A. one
- B. two
- C. three
- D. four

- c. Which type of graph is suitable to represent
 - these data?
 - A. Double bar graph.
 - B. Line plot.
 - C. Bar graph.
- **d.** From the opposite table, the value of X is
 - A. 6

B. 7

C. 8

D. 9

1	3	2	5	1	4	
3	2	4	1	3	1	
2	1	3	4	1	5	

Books R	Books Readers					
Name	Number					
Amgad	4					
Ola	5					
Nora	10					
Alaa	X					
Noha	2					
Total	30					

- e. The suitable graph representation to compare between two groups is
 - A. bars
- B. double bars
- C. line plot
- D. pictograph

[Alex. 23]

- f. Which type of graph is suitable to represent these data?
 - A. Double bar graph.
 - B. Line plot.
 - C. Bar graph.

Test Evaluation

Evaluation Total

Excellent 2

V.good 8

Good 6

Pass 4

- g. From the opposite table, the value of X is
 - A. 6

B. 4

C. 5

D. 6

Subject Marks						
Subject	Number					
Math	X					
English	13					
Arabic	15					
Science	11					
Music	6					
Total	50					

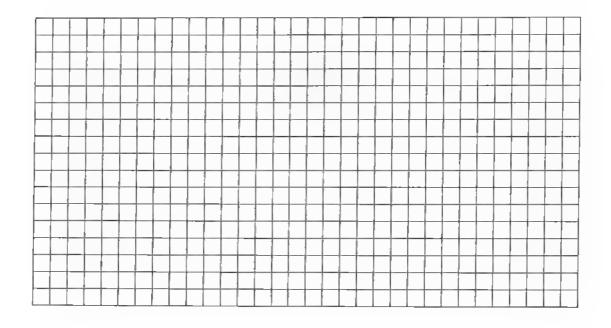
4 Answer the following.

a. Use the following data to make a line plot.

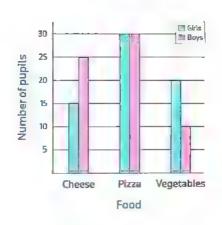
5 1	3 1/2	6 1/2	4 1/2	5 1/2	4 1/2	6 1/2	5 1/2	4 1/2	5 1/2
4	3	5	5 1/2	$3\frac{1}{2}$	4	6	6	4	5

b. The following data shows the number of study hours in a week by Eslam and Mina. Represent these data by a double bar graph.

Days Name	Sat.	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.
Eslam	3	4	$5\frac{1}{2}$	5	3	5	3 ¹ ₂
Mina	3 1/2	3	5	6	4 1/2	6 1/2	2



- food to boys and girls in grade four.
 - Answer the questions.
 - 1. What is the number of girls in grade four?
 - 2. What is the number of boys who liked cheese?
 - 3. Which type of food that liked by the same number of boys and girls?
 - 4. What is the difference between the number of boys and girls who liked vegetables?

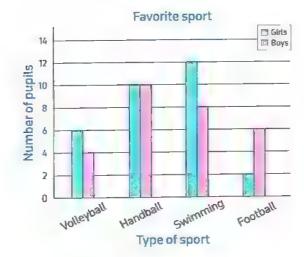


d. Complete the table.

puplis	sport	Volleyball	Handball	Swimming	Football
Bo	ys	4			
Gir	ls	-			2

Then answer the question:

What is the most sport boys are prefer?
(El-Beheira 23)





±12

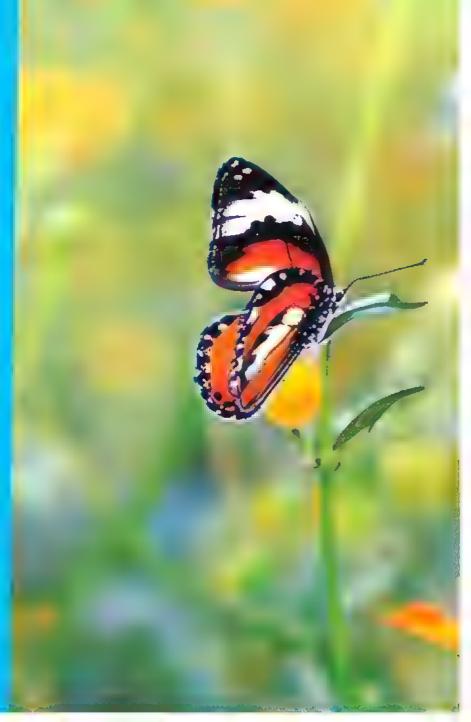
G(20)meday

- Company (1)
- Concept 4 1

Did you know ?!

THEME FOUR

Applications of Geometry and



Concept

4

Geometric Concepts



İ	Lessons	Points, Lines, Line	 Students will identify points, lines, line segments, and rays. 		
	182	Segments and Rays	Students will draw points, lines, line segments, and rays.		
		The Relation between	 Students will identify intersecting, parallel and perpendicular lines. 		
4		Two Lines	Students will draw intersecting, parallel and perpendicular lines.		
Maria	Lessons	Symmetry	Students will identify lines of symmetry in two-dimensional figures.		
-	3 & 4		Students will draw lines of symmetry in two-dimensional figures.		
ı		Real World Geometry	Students will apply geometry concepts to solve real-world problems.		

Lessons

182



- Points Lines Line Segments and Rolls
- Tre Religia un lice ligresco Than Lices

Learn 1 Points, lines, line segments and rays

Points, lines, rays, and line segments are basic geometric concepts. Artists, engineers, and architects use these concepts in the development of buildings and structures.

Term and definition	What you draw	What you say	What you write
A point is an exact location in space.	*A	"point A"	A [or Point A]
A line is a straight path of points that goes on forever in two directions. It has no endpoints.	В С	"line BC" "named by two points"	
A line segment is a part of a line. It has two endpoints and all the points between them. It is the shortest distance between two points.	В С	"line segment BC" "named by two endpoints"	BC (or CB)
A ray is a part of a line. It has one endpoint and extends forever in only one direction.	В С	"ray BC" "named by a starting point and a point in the ray direction"	ВČ

Notice that

A ray extends in only one direction.

A B

Ray AB $[\overline{AB}]$ starts at A and goes on in the direction of B.



Ray BA [\overrightarrow{BA}] starts at B and goes on in the direction of A.

 \overrightarrow{AB} not the same as \overrightarrow{BA}

Notes for parents:

Ask your child about the differences among the line, the line segment and the ray.

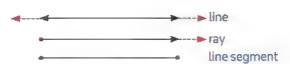


Notes

Points, line segments, rays, and lines are plane figures.



- · A plane is a flat surface that goes on forever in all directions. Imagine the plane as a sheet of paper extending forever in all directions.
- Planes have an infinite number of points and lines.
- · Shapes on a plane have only two dimensions.
- · A line extends infinitely in the two directions, but a ray extends infinitely in one direction, while line segment does not extend.



Example 1

Write the name for each.

Solution [

- a. Line ST (ST) or line TS (TS)
- c. Line segment EF (EF) or line segment FE (FE)
- b. Ray XY [XY]
- d. Ray NM (NM)

Example 2

e. Point G (G)

Draw and label an example of each.

- a. line BC (BC)
- **b.** line segment $PQ[P\overline{Q}]$
- c. ray GH (GH)

Solution 🕎





your understanding

Write the name for each.

Ask your child what geometric figure is somewhat like the surface of the water?



The relation between two lines

Some lines are given special names depending on their relationship with other lines. These terms can also be applied to line segments and rays.

The relation	What you see or draw	What you say
Parallel lines never cross and stay the same distance apart.	A C	line AB is parallel to line CD "ĀB is parallel to CD"
Intersecting lines pass through the same point.	G F H	line EF intersects line GH at point N "EF intersects GH"
Perpendicular lines are intersecting lines that form four square corners. Where they cross [intersect].	This symbol means that this is a square corner to tell you that these lines are perpendicular.	line OP is perpendicular to line NL at point M "OP is perpendicular to NL"

Notes

- Line segments and rays can also be parallel, intersect or perpendicular to each other depending on their relationship.
- Parallel lines never intersect or cross and two small arrows were drawn in the same directions to show that the two lines are parallel.
- All perpendicular lines are also intersecting.

Notes for parents:

 Ask your child: Are all perpendicular lines also intersecting? Are all intersecting lines also perpendicular? let him/her explain his/her answer.

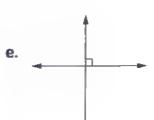


Example 3

Notice each pair of the following lines. Write "parallel, intersecting or perpendicular".









Solution [V



- d. Intersecting



- e. Perpendicular
- c. Perpendicular
- f. Intersecting



Example 4

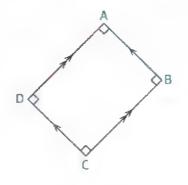
In the diagram at the right, identify:

- a. A pair of perpendicular line segments.
- b. A pair of parallel line segments.

Solution [8]



- a. AB and AD or BA and BC or CB and CD or DC and DA
- b. AB and DC or BC and AD







your understanding

Write the name of each pair of lines "parallel, intersecting or perpendicular".

a.







- Ask your child give you examples from our life for parallel lines and perpendicular lines.
- Ask your child: Are a horizontal line and a vertical line in the same plane parallel, perpendicular or neither? Explain.



- Point Lines Line Segment and Rein
- ▶ The Relation between Two Lines

REMEMBER

🚜 PROBLEM SOLVING

From the school book

First: Points, lines, line segments and rays.

- 1. Complete.
 - a. The opposite figure is called

Y Z

[Port Said 23]

b. The figure → is called

[Assiut 23]

- c. The figure •——— is named
- d. has a starting point and no endpoint.

[Port Said 23]

- e. has no endpoints.
- f.

has two end points.

2. Write all the names for the opposite line.

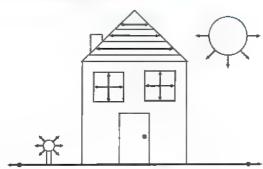


3. Matching rays, line segments and lines.

Draw a line matching the word, picture and symbol for each ray, line segment or line.

a.	C	line YZ	Ϋ́Z
b.	В	line segment BC	BĊ
C.	Z	line BC	ΫŻ
d.	Ý	Ray BC	BC
e.	Ž	line segment YZ	BC
f.	C	Ray YZ	ΥZ̄

- 4. House of Rays, Line segments, and Lines. Look at the following picture.
 - Trace any lines you see in green.
 - Trace any rays you see in orange.
 - Trace any line segments you see in blue.
 - Add additional images to the drawing using at least one ray, one line segment, and one line.



- 5. Draw and label an example of each.
 - a. Point F

b. line GH

c. XY

d. Ray ST

- e. \overrightarrow{AB}
- f. line segment XY
- g. DC
- 6. Write about Math. Identify a line, a ray and a line segment.

Explain the difference between a line, a ray and a line segment.

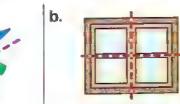
7. Write about Math. What will happen if you extend a line segment in one direction?

What will happen if you extend a line segment in both directions? Draw pictures to support your thinking.

Second: The relation between two lines

8. Choose the name for each pair of lines.

a.



C.



d.



Parallel Intersecting Parallel Perpendicular Intersecting Perpendicular Parallel Intersecting each picture, extend the lines or rays see if they are intersecting or parallel.

Hint: Boys san only extend in one direction.

Hint: Rays can only extend in one direction.





b.



C.



d.



e.

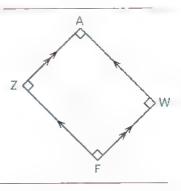


f.



10. In the figure at the right, identify.

- a. A pair of parallel line segments.
- b. A pair of perpendicular line segments.



11. Complete.

a. The two lines // are

[Luxor 23]

b. The two lines - are

[Giza 23]

c. The two perpendicular straight lines make

square corners.

[Kafr El-Sheikh 23]

d. The two

lines cannot intersecting.

[El-Monofia 23]

e. All perpendicular lines are also

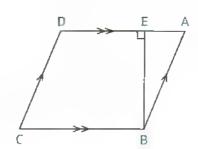
12. Complete using the opposite figure.

a. AB and

are parallel.

- b. BE is perpendicular to
- c. AD is parallel to

d. EB and AD intersect at point



13. Choose the correct answer.

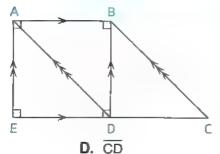
- a. AE is perpendicular to
 - A. BD

B. BC

C. AB

- D. AD
- **b.** \overline{AD} is parallel to
 - A. EC

- B. BC
- C. AB



- **5.** BG
- **c.** BD is perpendicular to
 - A. BC

- B. AE
- C. AD

D. EC

- d. AB is parallel to
 - A. AD

- B. CD
- C. BC

D. AE

- e. ED intersects BC at point
 - A. C

B. D

C. A

D. B

14. Draw LM is parallel to AB.



[Luxor 23]

15. Draw PQ is perpendicular to GH.



16. Draw CD is intersecting JK.



- 17. Draw \overrightarrow{AB} is parallel to \overrightarrow{CD} .
- 18. Draw WX is perpendicular to YZ.
- 19. Draw line XY is parallel to line segment AB.

[El-Beheira 23]

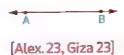
- 20. Writing About Math Decide whether each statement is true or false. Explain your reasoning.
 - a. All intersecting lines are perpendicular.
 - b. Two lines that never intersect must be parallel.
 - c. All perpendicular lines are intersecting lines.

Multiple Choice Questions





is named as -



2. The name of -

[Cairo 23]

A. AB

B. BA

A. a line.

B. an angle.

C. AB

D. BA

C. a ray.

D. a straight.

3. A/An — is a part of a line and has

two endpoints. ----

[El-Beheira 23]

A. A point

C. An angle

B. A line segment

D. A straight line

4. The shape that shows a ray is [Souhag 23]



5. The opposite lines



(El-Monofia 23)

The opposite two lines

are



A. perpendicular.

C. parallel.

B. intersecting.

D. obtuse.

A. perpendicular.

B. parallel.

C. intersecting and not perpendicular.

8. Which of the following figures shows

two perpendicular lines?

D. not intersecting.

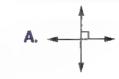
7. Which of the following figures shows

two parallel lines?

[Port Said 23]









[El-Menia 23]





9. The opposite figure is

named as



10. In the opposite figure:

The pair of parallel line segments

are

(El-Menia 23, Giza 23)

A. AB

C. AB

B. AB

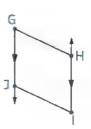
D. BA

A. GH and GJ

B. GJ and IH

C. TH and HG

D. IJ and GJ





- ▶ Symmetr¥
- ▶ Real-World Geometry

Learn

How can you describe and create symmetric figures?

Line of symmetry

An artist designed the trademark at the right for a sporting goods company.

Many trademarks are symmetric figures.

This means they can be folded into two congruent parts that fit on top of each other.

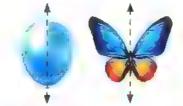
The fold line is a line of symmetry.



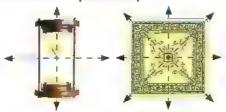
- 1. Fold a sheet of paper in half.
- Draw half of a face on the paper, using the fold as the line of symmetry.
- With the paper folded, cut holes for the eyes, nose, and mouth. Cut out the shape of the face.
- 4. Unfold the paper. Color your mask the same on each side of the fold.

Notice

These figures appear to have a line of symmetry.



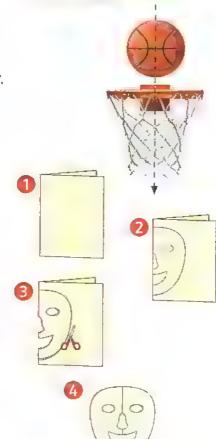
Some figures appear to have more than one line of symmetry.



Notes for parents:

 Ask your child: What is the meaning of symmetric figures? Ask him/her to find some symmetric figures at home.





Example 1

Does each figure appear to have a line of symmetry? Write yes or no.



b.

c. ()

d. _______

Solution 🕎

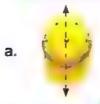
- a. No
- b. Yes

c. Yes

d. No

Example

Does each line appear to be a line of symmetry? Write yes or no.



b. ____





Solution [



b. No

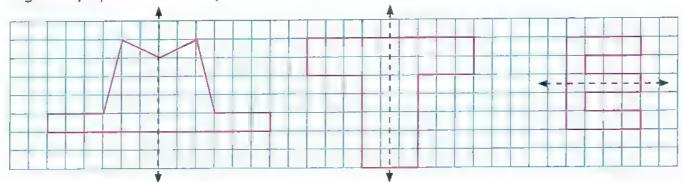
c. Yes

d. No

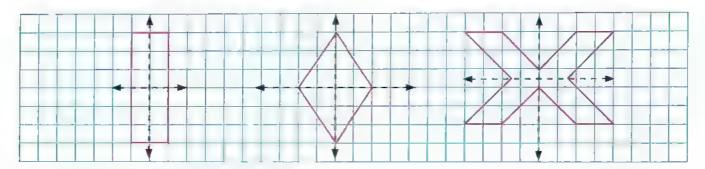
Another way to explore symmetry

Each shape below has a line of symmetry. It divides the shape into two equal parts.

A grid helps you see that the parts match.



Shapes can have more than one line of symmetry. Each shape below has two lines of symmetry. All of the parts match.



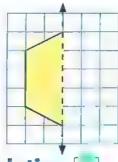
Notes for parents:

Ask your child where is the line of symmetry on his/her mask?

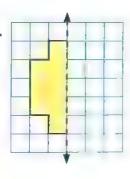
Example 3

Use the drawn line of symmetry to draw the other half.

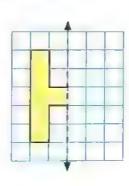
a.



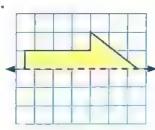
b.



C.

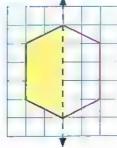


d.

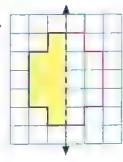


Solution 🖪

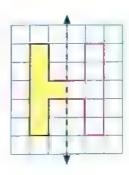
a.



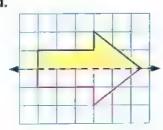
b.



c.



d.





your understanding

1. Does each figure appear to have a line of symmetry? Write yes or no.

a.



b.



С.

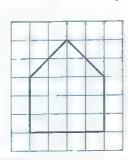


d.

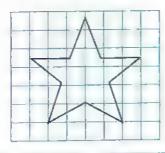


2. Draw a line of symmetry for each.

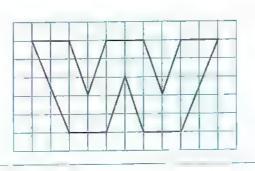
a.



b.



C.



Ask your child how many lines of symmetry can he/she draw for a circle.

Exercise 18 on lessons 384

- **▶** Symmetry
- ▶ Real-World Geometry

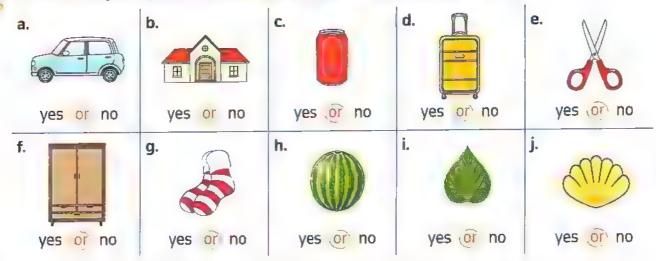




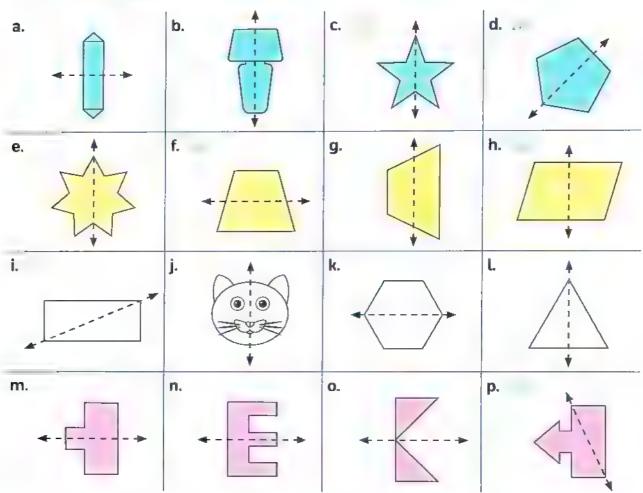


From the school book

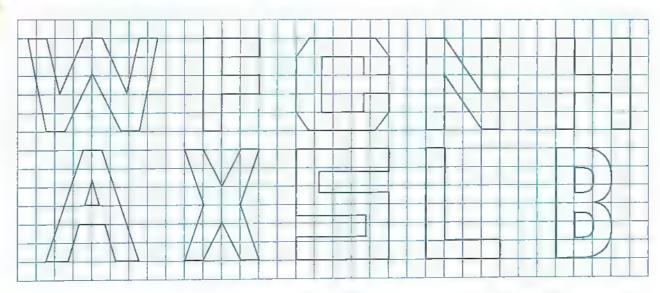
1. Does each figure appear to have a line of symmetry. Choose yes or no.



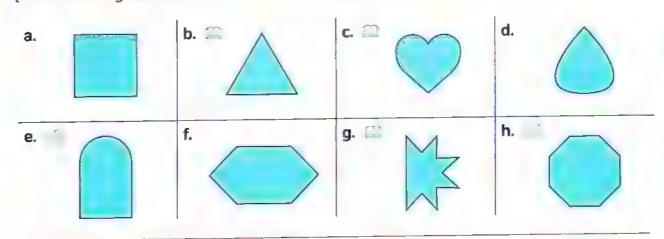
2. Determine if the drawn line is a line drawn is a line of symmetry. Circle the shapes that show a line of symmetry.



3. Color each shape that has one or more lines of symmetry.



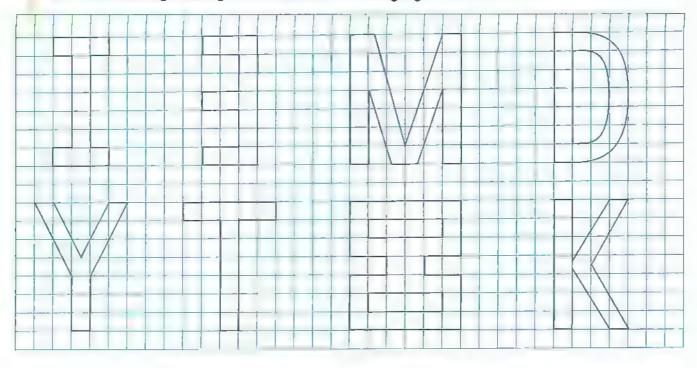
- 4. Look at each shape. Draw one line of symmetry For each one.
- [Hint: Some figures has more than one line of symmetry].



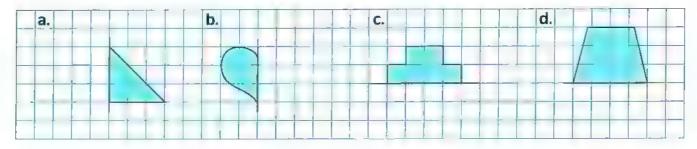
5. Symbol Symmetry. Look at each symbol. Some of the symbols are symmetrical, but some are not. Draw lines of symmetry in the symmetrical symbols. Some symbols may have more than one line of symmetry.

a.	В	b.	G	c.	A	d.	W	e.	Z
f.	p	g.	Υ	h.	٧	i.	!	j.	{

6. Draw a line of symmetry in each of the following figures.



7. Creating Symmetrical Shapes. In each picture, you can see half of the shape and the line of symmetry. Use that information to draw the rest of each shape.

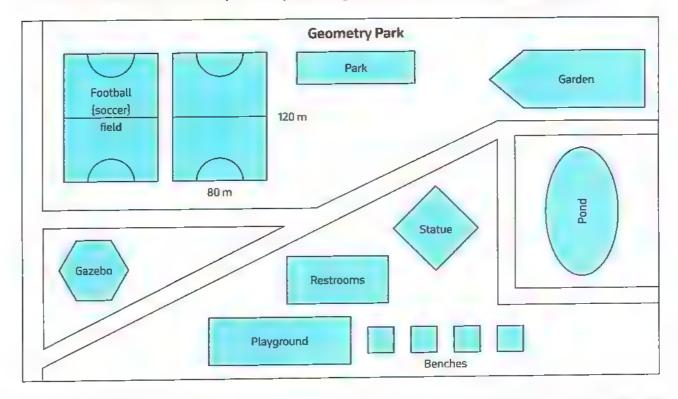


8. Writing About Math. How do you determine if a shape or symbol has a line of symmetry? Explain your answer using words and pictures.

9. Writing About Math. Where do you see geometry in the world around you? Where do you see shapes, lines, and symmetry? How does geometry make the world around you more beautiful and interesting?

10. Geometry Park. Look at the following picture of the park and then follow the directions.

- a. Color two perpendicular lines blue.
- b. What shape are the restrooms?
- c. Color two parallel lines green.
- d. How many quadrilaterals are in the park?
- e. Color two intersecting lines red.
- f. Circle and label three different two-dimensional shapes.
- g. Find the perimeter and area of one of the football pitches.
- h. Draw at least one line of symmetry on the garden, the gazebo and the statue.



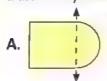
- 11. Design a Park. Use a graph paper. Follow the guidelines to design, label and color your own park. Your park must include the following.
 - At least two pathways that intersect.
 - At least two pathways that are parallel.
 - A play space for children in the shape of a quadrilateral.
 - A garden with a perimeter of 40 meters.
 - A monument or statue in the shape of a pentagon.
 - A water feature like a lake, a fountain or a pool that has an area of 32 square meters.
 - Symmetrical restrooms with more than four sides.

Choose the correct answer.

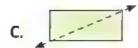
1. Which of the following shows

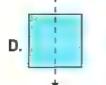
a line of symmetry?

[Kafr El-Sheikh 23]





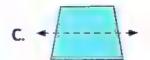


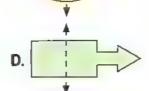


2. Which of the following figures shows a line

of symmetry?







[Alex. 23]

3. The number of lines of symmetry that can be drawn in the opposite figure

is



[El-Monofia 23]

A. 4

B. 3

C. 1

D. 2

has

of symmetry.

- line(s)

(El-Menia 23)

B. 0

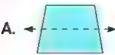
A. 2

C. 4

D. 1

5. All the following figures show a line of symmetry except

[Port Said 23]



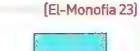
В.





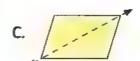
6. All the following figures show a line of

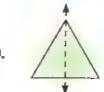
symmetry except











7. All the following figures has a line of symmetry except has more than one line of symmetry.









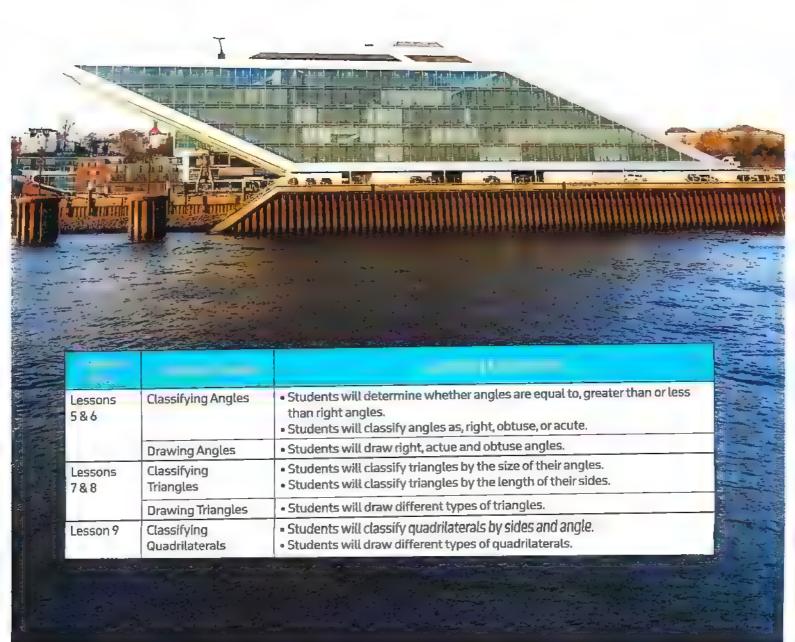
Concept



Classifying Shapes

Did you know ?!

This modern office building in Hamburg, Germany is in the shape of parallelogram!



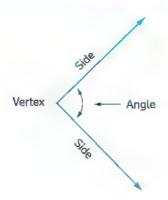


- Classifying Angles
- Drowing Angles



Learn 1 Kinds of angles

- An angle is formed by two rays that have the same endpoint.
- The common endpoint is called the vertex [plural: vertices].
- The rays are the sides of the angle.



Angles can be different sizes.





Acute angle



Obtuse angle



a small square is used to identify a nght angle





This is a right angle. It formed from two perpendicular rays.

This angle is less than a right angle. This angle is greater than a right angle.

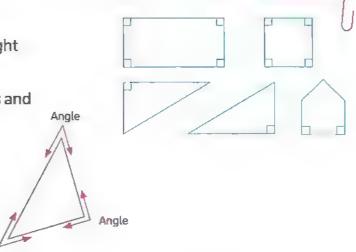
Notes for parents:

Draw an angle on a sheet of paper. Let your child point to its vertex and its sides.



Notes

- · You know that squares and rectangles are types of quadrilaterals that have right angles.
- · Right angles can also occur in triangles and polygons with more than four sides.
- · This is a polygon. Each corner of a polygon forms an angle.
- · In any polygon, the number of sides equals the number of angles.



Example 1

Circle all the right angles you see.





C.

Angle



d.



e.







d.





Circle the shapes that contain right angle.

a.



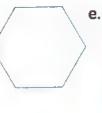
b.



C.



d.





Solution [





e.





Example 3

Identify the name of each angle "right angle - acute angle - obtuse angle" for each of the following.

a.











Solution 🖤



d. acute angle

- b. right angle
- e. obtuse angle

c. obtuse angle

Example 4

Write the number of right angles in each polygon.

a.







Solution [18]



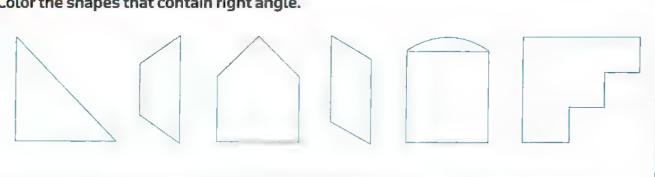


c. 0



your understanding

Color the shapes that contain right angle.



Notes for parents:

- Ask your child where he/she can find right angles, acute angles and obtuse angles around us.
- Ask him/her to give you examples for each.

Learn 2 Drawing angles

Remember the different kinds of angles.

A right angle forms a square corner.



An acute angle is less than a right angle.



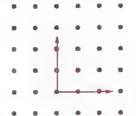
An obtuse angle is greater than a right angle.



You can use dot paper and a ruler to draw an angle

First Right angle

Use a ruler to draw 2 perpendicular rays that meet at the endpoint.



Second Acute angle

Use a ruler to draw 2 rays that meet at the endpoint less than a right angle.



Third Obtuse angle

Use a ruler to draw 2 rays that meet at the endpoint greater than a right angle.



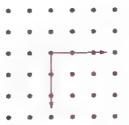
Example 5

Draw and label an acute angle, a right angle and an obtuse angle. [Using dot paper]

Colution



an obtuse angle



a right angle



an acute angle



your understanding

Draw and label a right angle, an acute angle and an obtuse angle.



[·] Help your child to draw some angles in a dot paper and write its name.

Exercise

- ▶ Classifying Angles
- Drawing Angles

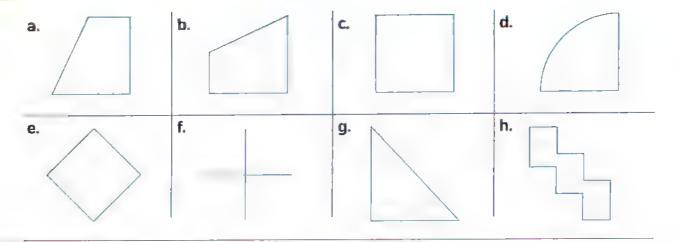




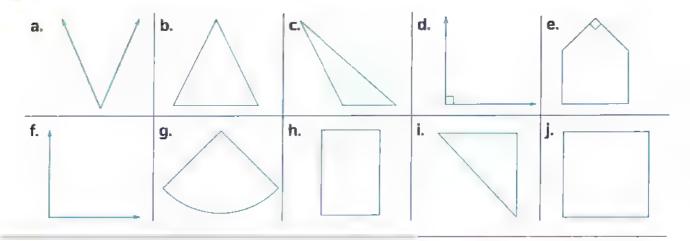


From the school book

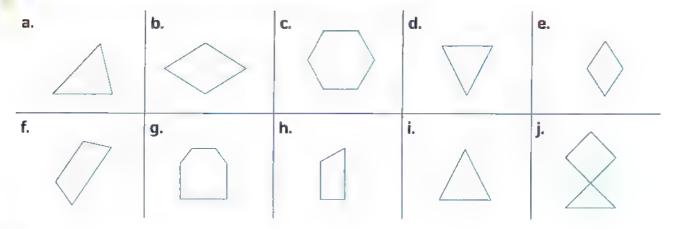
1. Circle all the right angles in the following figures.



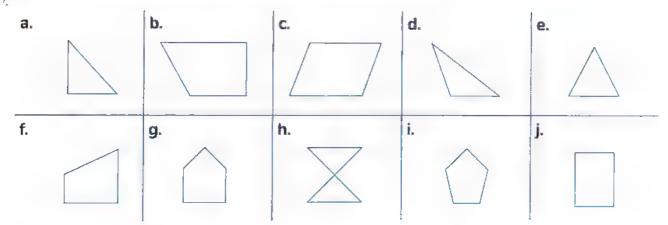
2. Circle the acute angles "less than right angle" in each of the following figures.



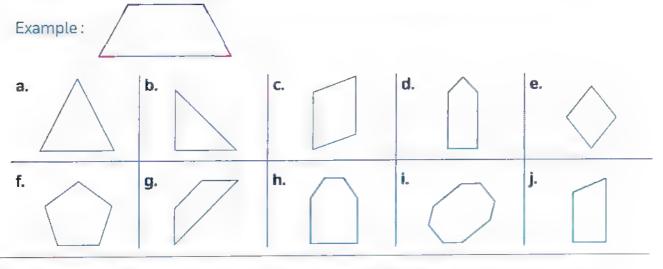
3. Circle the geometric figure that contains an acute angle.



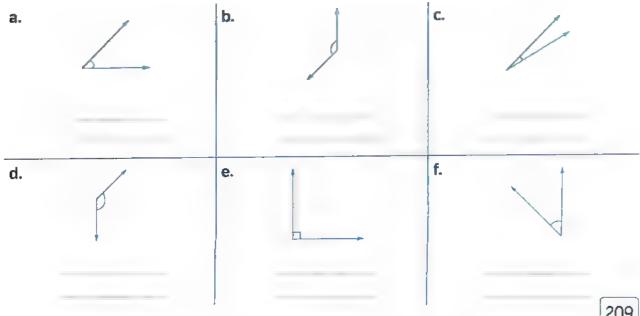
4. Circle the geometric figure that contains an obtuse a	obtuse angle	an ob	contains	that	figure	geometric	Circle the	4.
--	--------------	-------	----------	------	--------	-----------	------------	----



5. Types of Angles. Color acute angles red, right angles yellow, and obtuse angles blue. Use your index card to prove what type of angle is shown. An example is shown.



6. Comparing Angles. Look at the angles. Write whether each angle is larger than, smaller than or equal to a right angle, then write the kind of each angle.



7. Complete.

a. The opposite angle represents — angle.



(Giza 23)

b. The opposite angleis ——— angle.

[Cairo 23]

c. The opposite angle is —— angle.

[El-Menia 23]

d. An — angle less than a right angle.

[Luxor 23]

e. An angle more than a right angle.

f. How many acute angles are there in the figure?



[Kafr El-Sheikh 23]

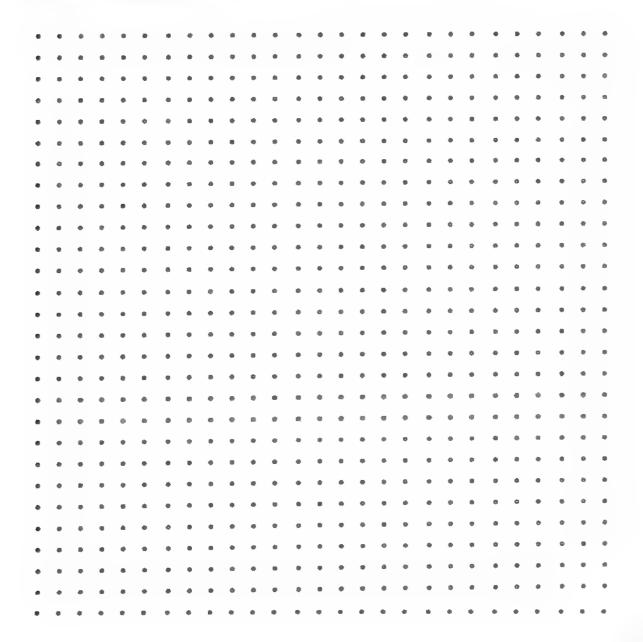
8. Drawing Angles Use a ruler to connect the dots to draw and label the following in the grid.

- a. 3 acute angles.
- b. 3 right angles.
- c. 3 obtuse angles.
- d. A right angle and an obtuse angle that share an endpoint.
- e. Two acute angles that share an endpoint.



9. Combine pattern blocks to create the shapes described on the following dot grid:

- a. Draw a right angle and an acute angle that share an endpoint. Label the angles.
- b. Draw two obtuse angles that share an endpoint. Label the angles. [Hints: You can use lines. Angles can face any direction.]
- c. Draw a triangle with a right angle.
- d. 🔙 Draw a triangle with three acute angles.
- e. Draw a quadrilateral with at least two right angles. Label the angles.
- f. Draw a quadrilateral with 4 right angles and name it.
- g. Draw a quadrilateral with two acute angles and two obtuse angles.
- h. Draw a hexagon with all obtuse angles.



Writing About Math. Read the statement. Rewrite Jana's instructions so they are 10. more clear for Manal.

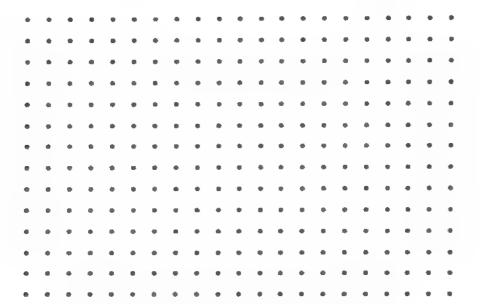
> Jana wanted Manal to draw an obtuse angle. She told her that she should draw two rays and make sure they are wide.

11. Another look. Why do you think there are so many right angles in the world around us? Use words and pictures to support your thinking.



Challenge

Create your own shape using pattern blocks. Ask your shoulder partner to identify the different angles in your shape.



Multiple Choice Questions

Choose the correct answer.

- is formed by two rays that share an endpoint.
 - A. A point
- B. A line segment
- C. An angle
- D. Aray

2. From the following, the acute angle is figure [Cairo 23]





- C.

3. Which figure shows a right angle? (Giza 23)





- D.
- 4. The figure that shows an obtuse angle is





- D,

5. The opposite figure is angle. represents

[Alex. 23]

- A. an acute
- B. an obtuse
- C. a right
- D. a straight
- 6. The number of the right angles in the opposite figure is



A. 1

B. 2

C. 3

D. 4

7. How many obtuse angles are there in the opposite figure?



A. 0

B. 1

C. 2

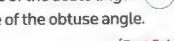
D. 3

8. The measure of the acute angle the measure of the right angle.



- A. >
- B. <
- C. =

9. The measure of the acute angle the measure of the obtuse angle.



[Port Said 23]

- A. <
- B. >
- C. =
- B. otherwise

- 10. Which angle that is smaller than the right angle?
 - A. an acute angle.
- B. a right angle.
- C. an obtuse angle. D. a straight line.



Cleanifying Triangles

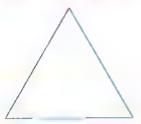
Brawing Triangles

Learn

How do you classify triangles?

Classifying triangles makes it eaier to describe them.

Triangles can be classified by the lengths of their sides.



Equilateral triangle

All sides are the same length.



Isosceles triangle

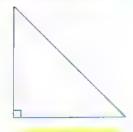
At least two sides are the same length.



Scalene triangle

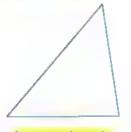
No sides are the same length.

You can also classify triangles by the sizes of their angles.



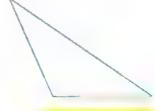
Right triangle

One angle is a right angle and the other two angles are acute.



Acute triangle

All three angles are acute angles.



Obtuse triangle

One angle is an obtuse angle and the other two angles are acute.

Example]

Name each triangle. Write right, obtuse or acute.









Solution 1

a. Acute



c. Acute

d. Obtuse

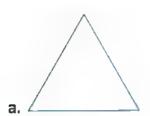
Notes for parents:

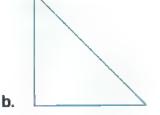
Ask your child to give you examples for each kind of triangle at home.



Example 2

Name each triangle. Write equilateral, isosceles or scalene.









Solution 🕎

- a. Equilateral
- b. Isosceles
- c. Scalene
- d. Equilateral

Example 3

Classify each triangle by its sides and then by its angles.















Solution 💱



Classification according to its sides:

- a. Isosceles triangle
- b. Scalene triangle
- c. Equilateral triangle

- d. Isosceles triangle
- e. Isosceles triangle

Classification according to its angles:

- a. Acute triangle
- b. Right triangle
- c. Acute triangle

- d. Obtuse triangle
- e. Right triangle

Ask your child: Can a right triangle also be an isosceles triangle? Explain.

Example 4

Draw right, acute and obtuse triangles. Write whether each is scalene, isosceles or equilateral.

Solution [7]

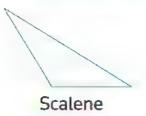


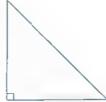


Acute triangles



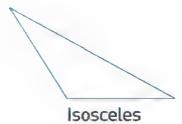
Obtuse triangles







Isosceles



Isosceles



Equilateral

Math Hint

- Equilateral triangles are always acute triangles.
- Any triangle has at least 2 acute angles.

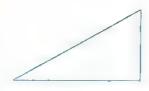




your understanding

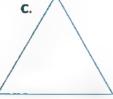
1. Classify each triangle as equilateral, isosceles or scalene.

a.



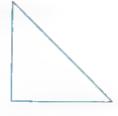
b.



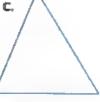


2. Classify each triangle as acute, right, or obtuse.

a.







Notes for parents:

Exercise

on lessons 7&8

Classifying Triangles

Drawing Triangles

REMEMBER





From the school book

1. Circle the equilateral triangle.











d.



2. Circle the triangle which is not isosceles.





b.





3. Circle the right triangles.



b.





d.



4. Name each triangle. Write equilateral, isosceles or scalene.

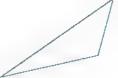
a.



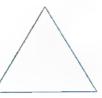
b.



C.

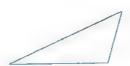


d.



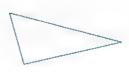


f.





h.



5. Name each triangle. write right, obtuse or acute.





b.







e.









6. Classify each triangle by its sides and angles.

a.





C.



d.



e.





g.



h.



7. Classify each triangle as equilateral, iscosceles or scalene.

a.



b.



C.



d.



e.



f.





a.



b



Ċ.



d



e.



f



9. Odd One Out. Look carefully at the sides and angles in each triangle. Circle the triangle that does not belong in each group. Use mathematical vocabulary to explain your reasoning.

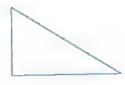
a.





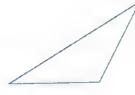


b.









C.

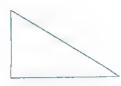








d.



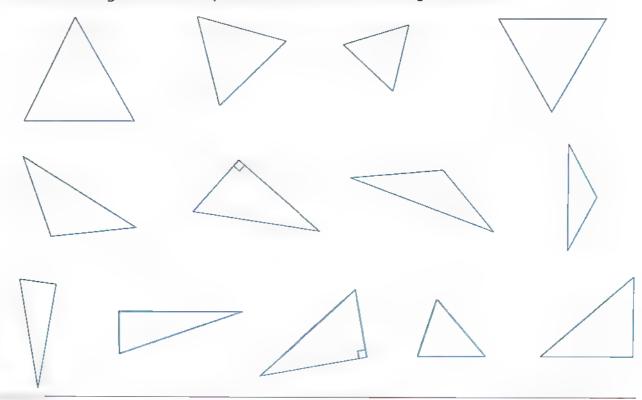






10. Classifying triangles. follow the directions to classify, color and trace each group of triangles

- Obtuse triangles have one obtuse angle. Color obtuse angles yellow.
- Right triangles have one right angle. Color right angles red.
- Acute triangles have three acute angles. Color acute angles green.
- Equilateral triangles have three sides. Trace equilateral triangles in orange.
- Isosceles triangles have two equal sides. Trace isosceles triangles in purple.
- Scalene triangles have no equal sides. Trace scalene triangles in black.



11. Who am !?

a.	I am a triangle with only two equal sides.	[<u>]</u>	
b.	I am a triangle with only one angle greater than a right angle.	[]	ļ
C,	I am a triangle with three equal sides.	[]	
d.	l am a triangle with three different sides.	[]	j
e.	I am a triangle with one right angle.	[J	
f.	I am a triangle with all angles less than a right angle.	[]	
g.	I am a triangle with two equal sides and all the angles are less than			
	a right angle.	[]	
h.	I am a triangle with no equal sides and one angle is greater than			
	a right angle	r	1	

12.	True or false.								
w	a. Equilateral triangle has only two equal sides.								
	b. Acute triangle has only one acute angle.]							
	c. Right triangle has two right angles.]							
	d. Scalene triangle has no equal sides.]							
	e. Obtuse triangle has one obtuse angle.	·]							
	f. Isosceles triangle has three equal sides.]							
	g. Equilateral triangles could be acute, right or obtuse.]							
	h. Isosceles triangles could be acute, right or obtuse.]							
	i. The opposite triangle shows	1							
	isosceles, acute triangle.	J							
	j. The opposite triangle shows	1							
	equilateral, right triangle.	,							
13.	Complete.								
	a. The triangle has no equal sides.								
	b. In the equilateral triangle, there are three sides are in length.	(Cairo 23)							
	c. The triangle has two equal sides is called triangle.	[El-Monofia 23]							
	d. If the lengths of sides of a triangle are 3 cm, 3 cm and 5 cm, then the type	e of this triangle							
	according to the lengths of its sides is triangle.	[El-Monofia 23]							
	e. The triangle that its sides are 5 cm, 5 cm and 5 cm is named	(El-Beheira 23)							
	f. The type of triangle whose side lengths are 4 cm, 5 cm and 6 cm is								
	g. ABC is an equilateral triangle where AB = 4 cm, then BC = cm	. (Port Said 23)							
	h. The type of the opposite triangle								
	is angle triangle.	[Assiut 23]							
	i. Any triangle has at least acute angles.	(Giza 23)							
	j. The type of triangle which has a right angle and two acute angles according to its								
	angles is								
	k. The type of triangle which has an obtuse angle and two acute angles ac	cording to its							
	angles is								
	l. The type of an equilateral triangle according to the its angles is								

Building Triangles. Work with your partner to use straws to create the triangles. Draw your triangles in the space provided.

a. Build an equilateral triangle.	b. Build a triangle with all acute angles.
c. Build a triangle with an obtuse angle.	d. Build a scalene triangle.
e. Build a right triangle.	f. Build an isosceles triangle.
g. Build an isosceles triangle with a right angle.	h. Build a scalene triangle with an obtuse angle.

- 15. I am a triangle with a right angle. Can I have three equal sides? Explain.
- 16. I am a triangle with two equal sides. Can I be right, obtuse or acute? Explain.
- 17. Write About Math. Jana says that a right triangle is always isosceles. Do you agree or disagree with Jana? Explain your thinking with words and pictures.
- Write About Math. Think about the triangles you see in the world around you. List at least three examples of triangles in the real world. If possible, classify them as acute, obtuse or right and as isosceles, scalene and equilateral, for example, the Great Pyramid has four sides that are triangles. The triangles are acute and equilateral.

Multiple Choice Questions

Choose the correct answer.

1.	The triangle / is	triangle.	2. The opposite trian angled triangle.	
	A. acute	B. right	A. an acute	B. an obtuse
	C. obtuse	_	C. a right	D. an equilateral
3.	The opposite triangle i triangle.	(Giza 23)	4. The opposite triangle is triangle.	
	A. a right	B. an acute	A. right	B. acute
	C. an obtuse	D. an equilateral	C. obtuse	D. scalene
5.	Which of the following isosceles triangle?	\wedge	6. The equilateral tri equal side(s). A. 0 C. 2	angle has [El-Menia 23] B. 1 D. 3
	A	B	7. The isosceles trial equal side(s). A. 0 C. 2	ngle has [Luxor 23] B. 1 D. 3
8.	The scalene triangle h	as [Cairo 23]	9. The triangle has d	lifferent sides is (Giza 23)
	A. 0	B. 1	A. isosceles	B. scalene
	c . 2	D. 3	C. equilateral	D. otherwise
10.	triangle has 3	B equal sides. [Luxor 23]	11. The opposite triar right ar	ngle has ngle[s]. [Giza 23]
	A. Scalene	B. Isosceles	A. 1	B. 2
	C. Equilateral	D. Right	C. 3	D. 4
12.	The triangle of side length 7 cm is called A. equilateral C. scalene	gth of 5 cm, 6 cm, triangle. [Port Said 23] B. isosceles D. otherwise	acute angle[s]. A. 3 C. 2	El-Monofia 23] B. 1 D. 4
14.	The classification of the A. equilateral, right C. scalene, right	opposite triangle by it B. isosceles, D. equilatera	acute	triangle.



Flore surfaceing by leading and a mark.

Learn

How do you classify quadrilaterals?

Quadrilaterals can be classified by their angles or pairs of sides. Remember that a quadrilateral is any polygon with 4 sides.



Remember

- Parallel lines do not meet.
- Right angles form square corners.



A quadrilateral with both pairs of opposite sides parallel and equal in length. Trapezium

A quadrilateral with only one pair of parallel sides

Rectangle

A parallelogram with four right angles. Rhombus

A parallelogram with all sides are the same length.

Rectangles and rhombuses are special parallelograms.

Square

A square is a special rectangle. It is also a special rhombus.

A rectangle with all sides are the same length.

Notes

- The quadrilaterals (Parallelogram, rhombus, trapezium) do not have four right angles.
- Square is a rhombus with four right angles.
- Parallelograms and rhombuses have two acute angles and two obtuse angles.



Ask you child are all squares rectangles? Are all rectangles squares? Explain.







Example 1

Write the name that best describes each figure.





C.



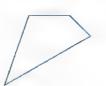
d.



e.



f.



Solution [V



- a. Parallelogram
- d. Square

- b. Rhombus
- e. Trapezium

- c. Rectangle
- f. Quadrilateral

Example 2

Use the description of the shape to mention its name.

- a. It is a quadrilateral with 2 pairs of parallel sides and has four equal sides and four same-sized angles.
- b. It is a quadrilateral with only one pair of parallel sides and has different sides in length and different angles in measure.
- c. It is a parallelogram with four-right angles.
- d. It is a rectangle with four-equal sides.
- e. It is a parallelogram with four equal sides, two acute angles and two obtuse angles.

Solution



a. Square

b. Trapezium

c. Rectangle

d. Square

e. Rhombus



your understanding

Write the name that best describes each figure.

a.



b.



C.



d.



e.



	*	

Let your child say a definition of a rhombus and a parallelogram. How are they alike? How are they different?

• Clearly ng Conditionals

REMEMBER

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	100	



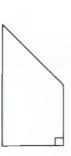
I From the school book

1. Write the name that best describes each figure.

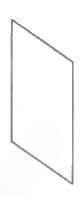




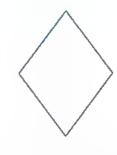
b.



C.



d.



e.



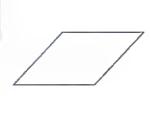
f.



g.

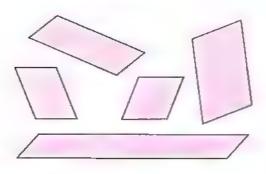


h.



2. Naming Quadrilaterals. Write the name of each quadrilateral. Count how many pairs of parallel sides the shape has and classify the angles. Draw at least one example of each quadrilateral using the dot grid.

a.

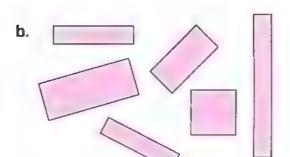




• Name:

Parallel Sides : ______

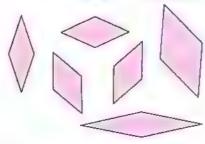
• Angles :

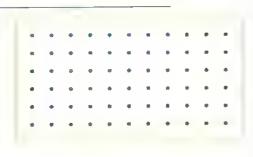




- Name :
- Parallel Sides :
- Angles :

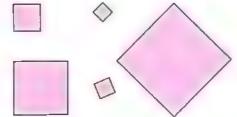
C.

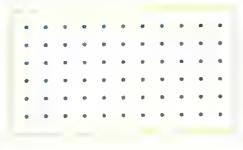




- Name :__
- Parallel Sides :
- Angles:

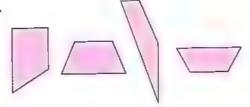
d.

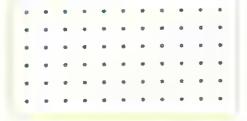




- Name :
- Parallel Sides :
- Angles : _

e.





- Name :
- Parallel Sides:_______
- Angles :

3.	Complete.		
1	a. The square has right angles.	[El-	Menia 23)
	b. The rectangle has right angles.		[Giza 23]
	c. The has only one pair of a parallel sides.		[Giza 23]
	d. The quadrilateral that has 4 equal sides and 4 right angles is o	talled , [El-B	eheira 23]
	e. A is a rectangle with 4 equal sides.		
	f. A quadrilateral is any polygon with sides.		
	g. A rhombus is a parallelogram with four equal		
	h. A is a parallelogram with four equal sides, two angles.	acute angles and two	obtuse
4.	True or False.	,	,
Name of Street	a. A Parallelogram has two pairs of parallel sides.		J
	b. Square is a rectangle with 2 acute angles and 2 obtuse an	ngles. (J
	c. Rectangles, rhombuses and squares are parallelograms.	l	J
	d. Rhombus is a rectangle with all sides are the same length		J
	e. Trapezium is a quadrilateral with only one pair of parallel	sides. (J
	f. All the quadrilaterals have 4 equal sides.	l f	J
	g. Rectangle is a parallelogram with four right angles.	l l	J
	h. Square is a rectangle with 4 equal sides in length.	l l	J
	i. Square is a rhombus with 4 equal angles in measure.	l	
	 j. All parallelograms are quadrilaterals and all quadrilaterals are parallelograms. 	[]
5.	Guess the quadrilateral.		
	a. Sama is making a design using a quadrilateral that has tw all sides are the same length, but with no right angles.	o pairs of parallel side	s with
	What shape is she using?	[]
	b. Ramy is making a design using a quadrilateral with only o	ne pair of parallel side	5.
	What shape could Ramy use?	[)
	c. Magy is making a design using a quadrilateral that has for sized angles.	ur equal sides and four	same-
	What shape is she using?	[<u> </u>
	d. Think about your own design. Write a description for your Draw your design and label it.	design.	

	ONOL! 12
6.	Draw according to each description. label the shapes you drawn.
	a. A quadrilateral that has no parallel sides.
	b. A quadrilateral that has only 1 right angle.
	c. A quadrilateral that has 1 pair of parallel sides.
	d. A quadrilateral that has 4 right angles and all the sides are equal.
	e. A quadrilateral that has 2 pairs of parallel sides with 2 acute angles and 2 obtuse angles.
	f. A quadrilateral that has 4 right angles and each two opposite sides are equal in length.
	g. A parallelogram which has four equal sides.

7. — Writing About Math. Why does it matter that you are able to classify lines, angles and shapes? Why does it matter that you can communicate about geometry shapes and ideas using mathematical language? Explain your thinking.

h. A rhombus which has right angles.

Multiple Choice Questions

Choose the correct answer.

1.	The quadrilateral that	has equal sides with	2	A square has	[El-Monofia 23	
	4 right angles is a [El-Menia 23]		3	A. 2 acute angles.	B. 2 obtuse angles.	
	A. rectangle.	B. square.		C. 4 right angles.		
	C. trapezium.	D. rhombus.		D. 4 different angle	S.	
3.	A parallelogram has	[Giza 23]	4.	The rectangle has	right angle(s).	
	A. 4 right angles.	B. 4 equal sides.			(Alex. 23	
	C. 1 pair of parallel sides.			A. 2	B . 3	
	D. 2 pairs of parallel	sides.		C. 4	D. 1	
5.	A rhombus has	equal side(s).	6.	A square has	_ equal sides.	
		(El-Beheira 23)			(Port Said 23)	
	A. 0	B. 1		A. 3	B. 4	
	C. 2	D. 4		C. 5	D. 6	
7.	The has one pair of two parallel		8.			
	sides.	[Giza 23]		A. Rectangle	B. Parallelogram	
	A. trapezium	B. parallelogram		C. Rhombus	D. Trapezium	
	C. rhombus	D. square				
9.	is a rectangle with 4 equal		10.	All the following qua	drilaterals with both	
	sides. [El-Menia 23]			pairs of opposite side	es parallel and equal in	
	A. Square	B. Parallelogram		length except		
	C. Rhombus	D. Trapezium		A. parallelogram.	B. trapezium.	
				C. rectangle.	D. rhombus.	
11.	The best describe of		12.	The best describe of		
-	the opposite figure			the opposite figure		
	is			is		
	A. trapezium.	B. parallelogram.		A. trapezium.	B. parallelogram.	
	C. rectangle.	D. square.		C. rectangle.	D. square.	

Unit Twelve Assessment



Choose the correct answer.

- 1. The opposite figure is named as
 - A. AB
- B. AB

- C. BA
- D. AB



2. is a polygon with six sides.

(Alex. 23)

- A. Triangle
- B. Pentagon
- C. Hexagon
- D. Quadrilateral

3. The classification of the opposite triangle,

is _

- A. isosceles, obtuse B. isosceles, acute
- C. equilateral, acute D. scalene, acute



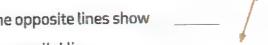
- 4. A _____ is a parallelogram with all sides are the same length.
 - A. parallelogram
- B. rectangle
- C. trapezium
- D. rhombus
- 5. Which of the following figures shows a line of symmetry?

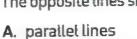






6. The opposite lines show





C. perpendicular lines

- B. intersecting lines
 - D. not intersecting lines

7. Which figure shows a right angle?



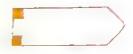


Complete.

is named as

[El-Beheira 23]

2. How many right angles are there in the opposite figure?



(Kafr El-Sheikh 23)

se	SSMENT REMEMBER CHUBERSTA B NOBLEM SOLVING
3.	Number of lines of symmetry of the figure =
4.	The two lines that will never intersect are called [Alex. 23]
5.	is formed by two rays that have the same endpoint.
6.	The angle is smaller than a right angle.
7.	The triangle has only two equal sides.
8.	The square has right angles.
Ch	oose the correct answer.
1.	A has a vary measuring angles with only one pair of parallel sides.

- - A. parallelogram
- B. rhombus
- C. square
- D. trapezium

- 2. Which of the following figures shows \overrightarrow{CD} ?

3. The equilaterlal triangle has

equal side(s).

A. 0

B. 1

C. 2

D. 3

- 4. The opposite two lines are
 - A. parallel
- B. not intersecting
- C. perpendicular
- D. intersecting and not perpendicular
- 5. The number of the right angles in the opposite figure



A. 1

B. 2

C. 3

- D. 4
- 6. The number of equal sides in the scalene acute triangle is
 - A. 0

B. 1

C. 2

D. 3

- 7. A parallelogram has
 - A. 4 equal sides

B. 4 right angles

C. 1 pair of parallel sides

D. 2 pairs of parallel sides

4 Answer the following questions.

- 1. Hany is making a design using a quadrilateral that has four equal sides and four same-sized angles. What shape is Hany using? Draw the design.
- 2. a. The type of the opposite triangle according to its angles is

b. The perimeter of triangle = ____ cm. [Alex. 23]



3. Draw LM is perpendicular to \overrightarrow{AB} .



[El-Monofia 23]

4. a. Draw an obtuse angle.

[Kafr El-Sheikh 23]

b. Draw a right angle.

[Alex. 23]

THEME FOUR

Applications of Geometry and Measurement

Angles of a Circle

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(Usaling the English)

Contager 1

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Concept

Breaking the Circle into Angles



\$ 5 S	Sellen i (office)	
Lesson 1	The Circle and the Degrees	Students will explain the relationship between circles and angle measurement.
Lesson 2	Measuring Angles Using a Circle Model	Students will identify angle measurements on a circle model. Students will relate fractions of a circle to angle measurements.

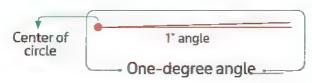


The Circle and the Degrees

Learn

Types of angles in a circle

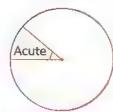
We usually measure angles in degrees[o].



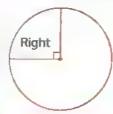
- There are 360 degrees in a circle.
- An angle that turns through ¹/₃₆₀ of a circle is called "one-degree angle".







Acute angle Between 0° and 90°



Right angle exactly 90° $\frac{1}{4}$ of a full rotation



Obtuse angle Between 90° and 180°



Straight angle
exactly 180°

1/2 of a full
rotation

Notes

Circle can be divided into 4 right angles or two straight angles. Each circle has 360°

- A right angle is 90 degrees because a right angle is $\frac{1}{4}$ of the circle or because there are 4 right angles in the circle and $360^{\circ} \div 4 = 90^{\circ}$
- 90° 90°
- There are 180 degrees in a straight angle because it is half of the circle, or because it is the same as 2 right angles.

Notes for parents :

 Ask your child to identify types of angles in a circle and tell the degrees measure of each type of angles.



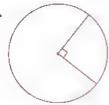
Example 1

Classify each marked angle of the following.

a.



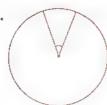
b.



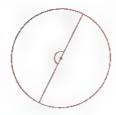
C.



d.



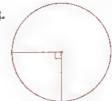
e.

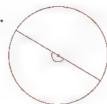


f.



g.





Solution 🕎



- a. acute angle
- e. straight angle
- b. right angle
- f. acute angle
- c. obtuse angle
- g. right angle
- d. acute angle
- h. straight angle

Example 2

Classify each angle according to the measure.

- a. 60°
- d. 147°

- b. 90°
- e. 88°

- c. 180°
- f. 92°

Solution [V



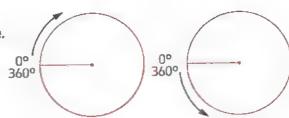
- a. acute angle
- d. obtuse angle

- b. right angle
- e. acute angle

- c. straight angle
- f. obtuse angle

Circle directions

- There are two directions they can go on a circle. as shown on the opposite figures
- 0° is the starting point.
- Full rotation makes 360°.



Ask your child to draw more examples for acute, right, obtuse or straight angles in a circle.

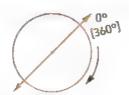
Example 3

Move from 0° in the given direction and draw a right angle , then label 90° and 180° on each

a.



b.



Ċ.

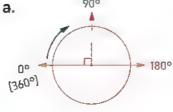


d.

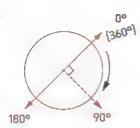


Solution 👰

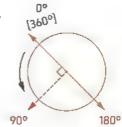




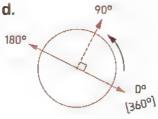
b.



C.



d.





your understanding

Classify each marked angle of the following.

a.



b.



c.



d.



e.



f.



Notes for parents:

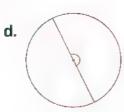
Tell your child that the point 0° in a circle still the same after one or more full rotation in any direction.

1. Classify each angle as acute, right, obtuse or straight.

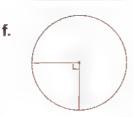


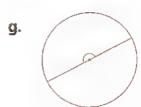


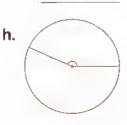




e. _____







Classify each angle according to its measure.

- a. 79° —
- d. 30° —
- g. 179° ----
- j. 176° ---

- **b**. 120°
- e. 180° ———
- h. 95°
- k. 130° ---

- **c.** 90°
- f. 89° _____
- i. 60° —
- L 27° ---

3. Complete.

a. An acute angle measures between _____ o and

b. An obtuse angle measures between ______ and _____ and

c. The measure of acute angle is less than ______

[Alex, 23]

d. The measure of right angle =

[El-Menia 23]

e. The measure of the straight angle =

[Luxor 23]

f. ___ measures between 0° and 90°

[Alex. 23]

g. The angle whose measure 90° is called

angle.

[Cairo 23]

h. The angle of measure less than 90° is

angle.

(El-Menia 23)

The angle which its measure equal 30° is

angle.

[El-Beheira 23]

The angle which its measure is 120° called

angle.

[Souhag 23]

k. 84° is classified as angle.

[El-Beheira 23]

The angle which its measure equals 170° is

angle.

[Kafr El-Sheikh 23]

m. There are

degrees in a circle.

n. $\frac{1}{2}$ of a circle measures

° | \mathbf{o} . $\frac{1}{4}$ of a circle measures

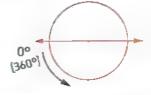
4. Circles and Angles Move from 0° in the given direction and draw a right angle.

Then, label 90° and 180° on each circle.

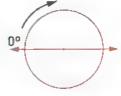
a. 🕮



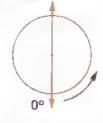
b.



c. 🕮



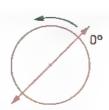
d. 🛄



e. 🕮



f.



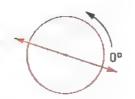
g. 🕮



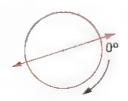
h. 🕮



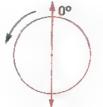
î.



j.



k.





- 5. Angles on a circle. Draw the given angles on the circles and label them acute or obtuse.

 Label 0° and 180° and fill in the blanks.





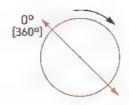
c. Draw a straight angle
 A straight angle measures
 degrees.



d. Draw a right angle.A right angle measuresdegrees.

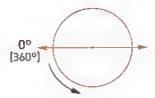


6. Label 180°. Draw an obtuse angle moving from 0° in the given direction. Label the angle.



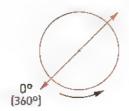
7. Label 180°. Draw an acute angle moving from 0° in the given direction.

Label the angle.



8. Label 180°. Draw a right angle moving from 0° in the given direction.

Label the angle.



Choose the correct answer.

1. Which of the following figures shows

a $\frac{1}{2}$ of a full rotation?

[Luxor 23]



B.



C.



D.



2. Which of the following figures shows

a $\frac{1}{4}$ of a full rotation?







3. The measure of straight angle =

the measure of circle.

[Alex, 23]

- A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{1}{4}$
- D. $\frac{1}{5}$
- There are degrees in a circle.

[Luxor 23]

- **A.** 360°
- B. 180°
 - **C**. 25°
- D. 90°

5. Circle can be divided into right

angles.

[Ismailia 23]

A. 1

B. 2

C. 3

D. 4

- 6. The angle which is represented by the figure is
 - A. acute B. obtuse
 - C. right
- D. straight

7. The angle whose measure is less than

90° is angle. [Kafr El-Sheikh 23]

- A. an acute
- B. a straight
- C. an obtuse
- D. a right

8. Which is a measure of an acute

12. The right angle measures exactly

- angle?
- (Souhag 23)
- A. 40°
- B. 90°
- C. 120°
- D. 180°

- 9. The measure greater than 0° and less than 90° is a measure of angle.[Giza23]

 - A. an acute C. a right
- B. an obtuse
- D. a straight
- 10.
- angle measures between 90° and 180° [Giza 23]
 - A. An acute
- B. An obtuse
- C. Aright
- D. A straight

(El-Beheira 23)

11. The angle whose measure is 99° is

called

- —— angle,
- [Alex. 23]

- A. acute C. obtuse
- B. right

D. straight

- A. 90
- **B**. 30

C. 0

D. 61

13. The measure of straight angle =

[El-Monofia 23]

A. 108

B. 118

C. 180

D. 90

14. An angle whose measure is 88° is called

angle.

(El-Monofia 23)

A. an acute

B. a right

C. an obtuse

D. a reflex

15. The angle whose its measure equals 170° is

A. an acute

B. an obtuse

angles.

C. a right

[El-Monofia 23]

D. a straight

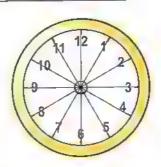


Measuring Angles Using a Circle Model

Learn

Measuring angles using a circle model

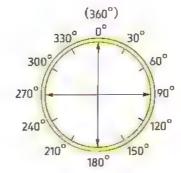
The model at the right has been divided into
 12 equal angles. As the measure of the circle is
 360°, then the measure of each angle equals ¹/₁₂
 of the circle



• The measure of one angle = $\frac{1}{12} \times 360^{\circ}$ = $360^{\circ} \div 12 = 30^{\circ}$



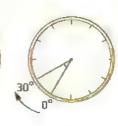
• The measure of the angles on a model can be shown as the following.



Note that







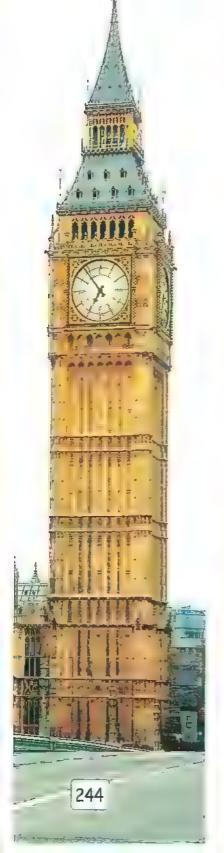


30°
(In different direction)

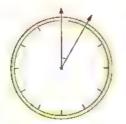
• 0° can be anywhere on a model.

Notes for parents:

 Ask your child if the model has been divided into 12 equal angles, what is the measure of each angle?



▶ Relate fractions of a circle to angle measurments



$$\frac{1}{12} = 30^{\circ}$$



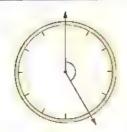
$$\frac{2}{12} = \frac{1}{6} = 60^{\circ}$$



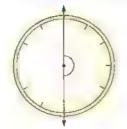
$$\frac{3}{12} = \frac{1}{4} = 90^{\circ}$$



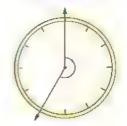
$$\frac{4}{12} = \frac{1}{3} = 120^{\circ}$$



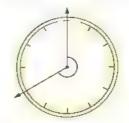
$$\frac{5}{12} = 150^{\circ}$$



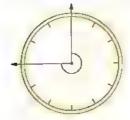
$$\frac{6}{12} = \frac{1}{2} = 180^{\circ}$$



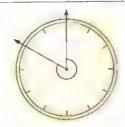
$$\frac{7}{12}$$
 = 210°



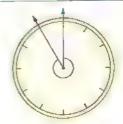
$$\frac{8}{12} = \frac{2}{3} = 240^{\circ}$$



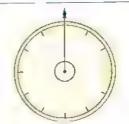
$$\frac{9}{12} = \frac{3}{4} = 270^{\circ}$$



$$\frac{10}{12} = \frac{5}{6} = 300^{\circ}$$



$$\frac{11}{12} = 330^{\circ}$$



$$\frac{12}{12} = 1 = 360^{\circ}$$

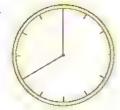
Example 1

Write the fraction of the model colored and how many degrees of the model that fraction represents.

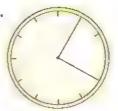
a.

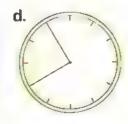


b.



c.





Solution 🕎

a.
$$\frac{2}{12} = \frac{1}{6}$$
; $60^{\circ} [2 \times 30^{\circ} = 60^{\circ}]$

c.
$$\frac{9}{12} = \frac{3}{4}$$
; 270° [9 × 30° = 270°]

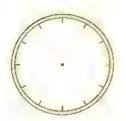
b.
$$\frac{4}{12} = \frac{1}{3}$$
; 120° [4 × 30° = 120°]

d.
$$\frac{3}{12} = \frac{1}{4}$$
; $90^{\circ} [3 \times 30^{\circ} = 90^{\circ}]$

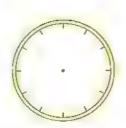
Example 2

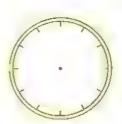
Use the blanck model and what you know about benchmark angles to write the missing angle measurements.

a. $\frac{1}{12}$



b. $\frac{5}{12}$







Note that

Angles on the model may vary in shape but not in measure.

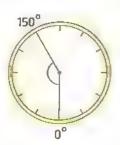
Solution [🖤



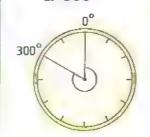
a. 30°



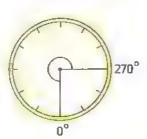
b. 150°



c. 300°



d. 270°



Example 3

Show the following angles on the blank model and write the related fraction.

a. 90°

b. 330°

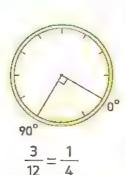
c. 120°

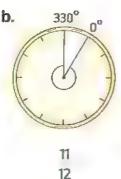
d. 240°

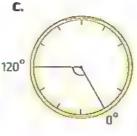
Solution []



a,









Note that

Angles on the model may vary in shape but not in measure.

Notes for parents:

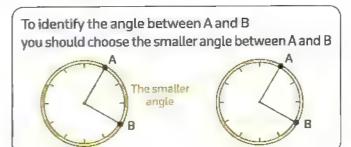
· On a sheet of paper draw a blank model and color a section of it, then ask your child to tell you the measure of the angle.

Example 4

For each problem, imagine you are walking from one point, through the shopping center, to the second point. Identify the angles traveled between the points in shopping center.

(Hint: Each section of the model measures 30 degrees.)



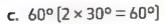


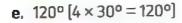
- a. A and B
- c. Cand D
- e. Band C

Solution [V





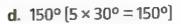






f. A and D





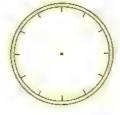
 $f. 90^{\circ} (3 \times 30^{\circ} = 90^{\circ})$



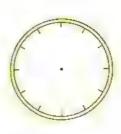


your understanding

Use the blank model and what you know about benchmark angles to write the missing angle measurements in degrees.







Let your child remember that the angle between each two consecutive numbers of the model equals 30°.

Exercise

on lesson

Majsuring engles Leing a Circle Morel







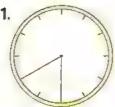
From the school book

1. Match.

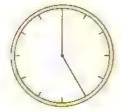




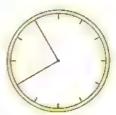


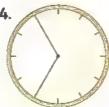


2.



3.

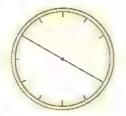




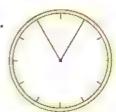
2. Write the measure of colored angles in degrees.

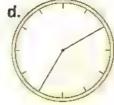
b.

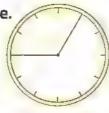
f.



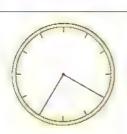
C.



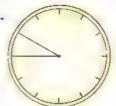


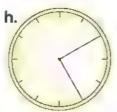


[El-Menia 23]



g.

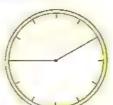


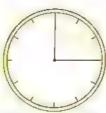


3. Fractions and Angles on a clock. Write the fraction of the colored model and how many degrees of the clock that fraction represents.

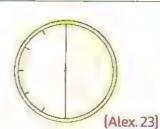


b.





d.



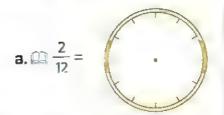
e, 🐪

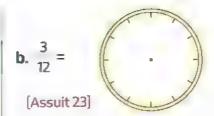


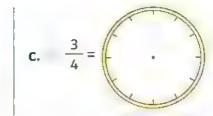
f.

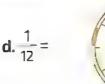


4. Use the blank model and what you know about benchmark angles to write the missing angles measurements.







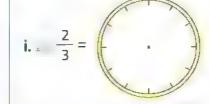


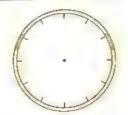


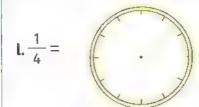
e.
$$\frac{5}{12} =$$

g.
$$m = \frac{11}{12} = \frac{1}{12}$$

$$h. \frac{1}{3} =$$





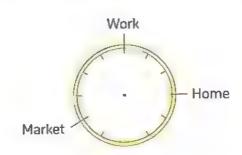


- 5. Show the following angle measurements on blank model and write the related fractions.
 - a. 60°
- **b.** 210°
- c. 90°
- **d.** 300°

- e. 270°
- f. 150°
- g. 360°
- h. 180°
- 6. Traveling Around Town. For each problem, imagine you are walking from one place, through the center of town, to the second place. Identify the angles traveled betwen the places in town.



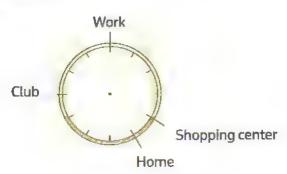
- b. Work and market
- c. Home and market



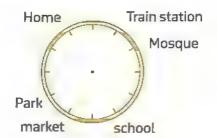
7. Traveling Around Town. For each problem, imagine you are walking from one place, through the center of town, to the second place. Identify the angles traveled between the places in town.

(Hint: Each section of the model measures 30 degrees).

- a. Work and shopping center.
- b. Work and home.
- c. Work and club.
- d. Shopping center and home.
- e. Shopping center and club.
- f. Club and home.



- 8. Traveling Around Town. For each problem, imagine you are walking from one place, through the center of town, to the second place. Identify the angles traveled between the places in town. (Hint: Each section of the model measures 30 degrees.)
 - a. Home and school.
 - b. Park and school.
 - c. Market and home.
 - d. Mosque and train station.
 - e. Mosque and market.
 - f. School and market.



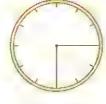
Multiple Choice Questions



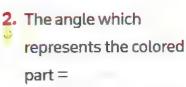
1. The angle which represents the colored part equals



B. 60°

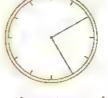


[El-Menia 23]





B. 170° A. 150°



[El-Beheira 23]

C. 90°

D. 120°

- C. 100°

D. 90°

3. The angle which represents the colored part = -



A. 60° B. 120° [Kafr El-Sheikh 23]



4. The fraction $\frac{1}{12}$ of a circle makes an angle of measure degrees.

A. 30

B. 60

[Alex. 23]

- C. 90
- D. 180

 $\frac{1}{2}$ of a circle measured

C. 90° **D.** 300°



[Luxor 23]

- C. 180° D. 360°

6. $\frac{1}{3}$ of a circle measured

- **A.** 0° **B.** 120° (Kafr El-Sheikh 23) **C.** 100° **D.** 360°

7. Measure of the angle which represents



[Port Said 23]

- A. 90
- **B**. 180
- C. 270
- **D.** 360
- 8. The fraction $\frac{5}{12}$ makes an angle of

measure

- [Souhag 23]
- A. 90°
- B. 150° C. 210° D. 300°

The angle which measures 270° shows a fraction



- 10. The angle which measure is 360° represents a fraction of
 - A. $\frac{1}{2}$

- c. $\frac{12}{12}$ D. $\frac{4}{10}$
- 11. What fraction of a circle a 60° angle would represent?



- C. $\frac{1}{\Delta}$

- 12. What fraction of a circle a 1º angle would represent?
 - **A.** $\frac{1}{360}$

- **D.** $\frac{360}{360}$



2

Measuring and Drawing Angles



lesson .	Lesson Name	Learning Objective		
Lessons 3 & 4	Using Protractor	 Students will identify the parts of angles. Students will name angles. Students will describe the characteristics of a protractor. 		
	Measuring Angles	Students will use a protractor to measure angles.		
Lessons 5 to 7	Drawing Angles	Students will use a protractor to draw angles between 0 and 180 degree.		
5 (0 /	Drawing Angles with a Protractor	Students will use a protractor to draw angles between 0 and 180 degree		
	Classifying Triangles Using Geometric Tools	 Students will classify triangles according to the length of its sides using the ruler. Students will classify triangles using the measures of its angles using the protractor. 		

2 O'SHORE

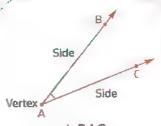
- Using Protractor
- Measuring Angles

Learn 1 Naming angles

- An angle is formed by two rays that have the same endpoint.
- Angle BAC [written ∠ BAC] is shown at the right. Its sides are \overrightarrow{AB} and \overrightarrow{AC} . Point A is called the vertex.

Note

∠ is an angle symbol and read as

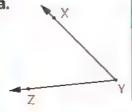


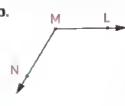
L BAC $(or \angle CAB or \angle A)$ When three letters are used, the middle letter names the vertex.

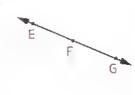
Example

- 1. Name the rays and the vertex of each angle.
- 2. Name each angle in three different ways:

a.







Solution [



1. YX , YZ vertex Y

2. LXYZ

ZYX

LY

1. FE , FG, vertex F

2. L EFG

∠ GFE

LF

b.

1. ML, MN vertex M

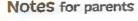
2. \angle NML

LMN

 $\angle M$

Notes for parents:

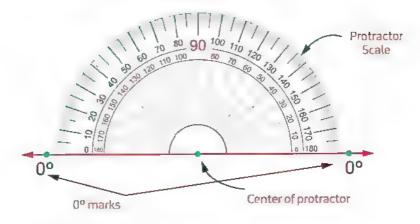
- Draw an angle on a sheet of paper. Let your child point to its vertex
- Draw angle ABC and let your child name it in different ways.





Learn 2

How can you measure angles?

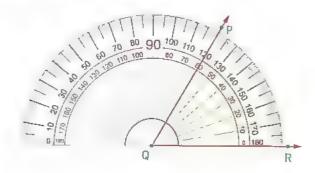


- You can use a protractor to find the size, or measure of an angle.
 An angle is measured in degrees [^o].
- A protractor is an instrument used to measure the size of an angle.
- A protractor has a centre which locate the vertex of an angle.
- A protractor has two graduations and you first decide if the direction of the angle is right or left of 90° (obtuse or acute) Then, while you use the protractor, you choose the measure from the appropriate direction.

▶ To Measure an angle

Follow the instructions:

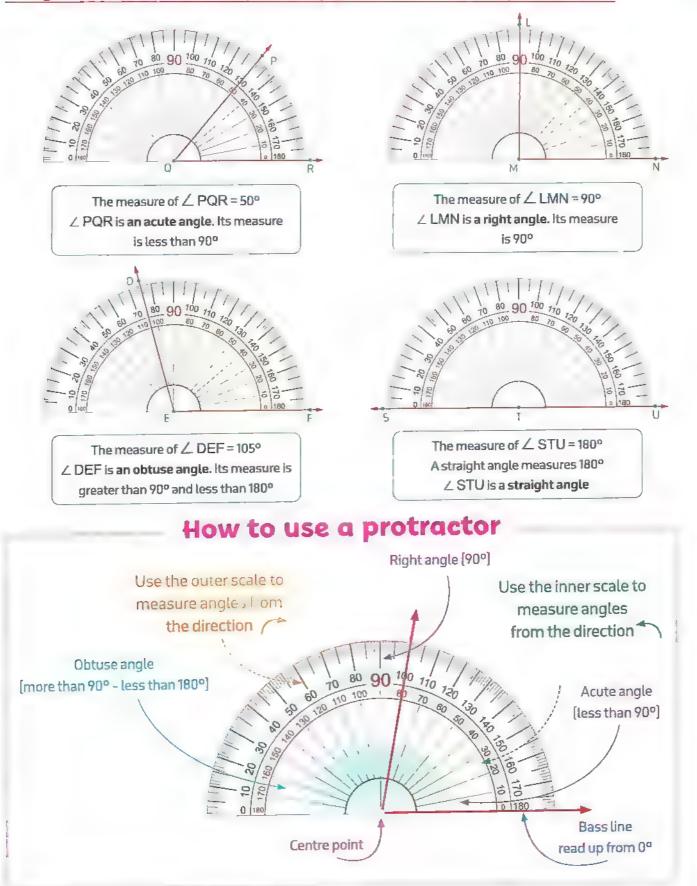
- Step 1: Line up the center mark with the vertex of the angle.
- Step 2: Make sure that the zero line of the protractor is lined up with one of the angle's rays.
- Step 3: Think about what type of angle you are measuring. If you are measuring an acute angle. Use the numbers that are less than 90° If you are measuring an obtuse angle. Use the numbers that are greater than 90°
- Step 4: Look at where the angle's other ray passes through the protractor.
- In the opposite figure the ray across the scales at 120° and 60° while the angle is an acute, then the measure 60° is correct.



Notes for parents:

 Remind your child to follow the instructions every time to measure any angle and remember to measure the inner angle between the two rays.

Angles can be classified by the way their measures compared to 90°

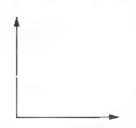


 Ask your child to name the angles in this page in different ways and tell how to use a protractor to measure them.

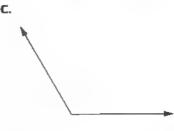
Example 2

Trace each angle and extend its sides. Use a protractor to measure :

a.









a. 90°



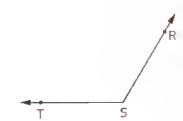
c. 120°



To measure an angle, you may need to trace it and extend its sides.

Example 3

Give three different names for the opposite angle. Identify the vertex and sides. Measure the angle using a protractor.



Solution [7]



The names: ∠ TSR, ∠ RST, ∠ S

The vertex: Point S The sides: SR, ST

The measure of ∠ S is 120°



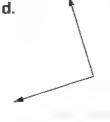
your understanding

Use a protractor to measure each of the following angles.



C.





Notes for parents:

 Tell your child that no matter dierctions of the angle and tell him/her to extend the line in the same direction to use the protractor easily.

Thomas Pharmathia

Measuring Angles

REMEMBER



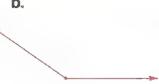
ROBLEM SOLVING

From the school book

1. Classify each angle as acute, right, obtuse, or straight. Then measure each angle. (Hint: Trace each angle and draw longer sides if necessary).



b.



C.



d.



e.

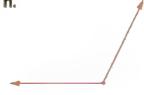


f.



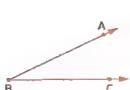
g.





Investigating Protractors. Write three different names for each angle. When you are finished, investigate how to use the protractor to measure angles.

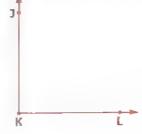
a.



Name 1: Name 2:

Name 3:

[Assiut 23]



Name 1: -

Name 2:

Name 3:



c.



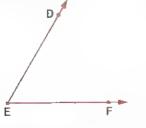
Name 1:

N	a	ĮΥ	ne	2	4

Name 3:



d.



Name 1:

Name 2:

Name 3:

e.

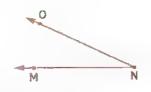


Name 1:

Name 2:

Name 3:

f.

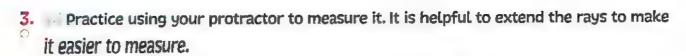


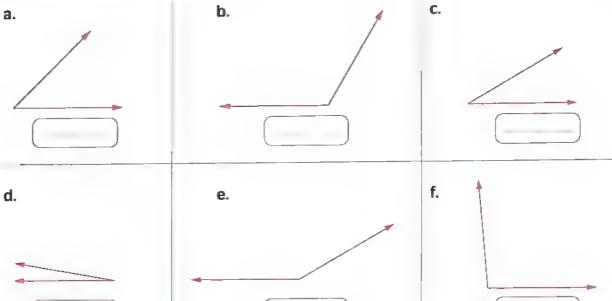
Name 1:

Name 2:

Name 3:

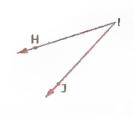
Lessons 3&4

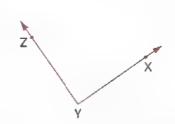




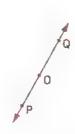
4. Give three different names for each of the following angles. Identify the vertex and sides. Measure the angle using a protractor.

a.

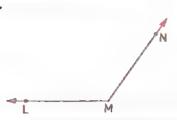




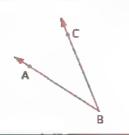
C.



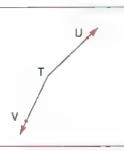
d.



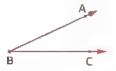
e.



f.

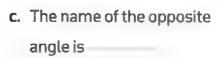


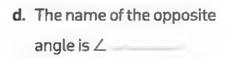
- 5. Complete.
 - a. The vertex of opposite angle is



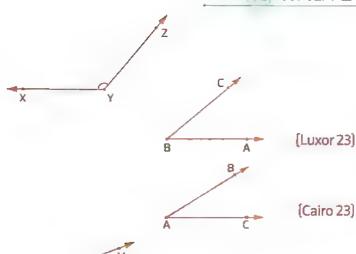
[Port Said 23]

b. The two sides of the opposite angle are ______,



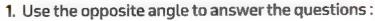


e. The name of the opposite angle is ∠

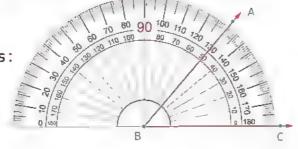




- f. The instrument that is used to measure the angles is called
- 6. Answer each of the following questions.



- a. Its name is ∠
- b. Its type is:
- c. Its measure = _____ Giza 23]



- 2. In the opposite angle:
 - a. Its measure is _____
 - b. And type is _____ angle.

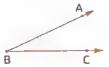




- 3. In the opposite figure:
 - a. Name of the angle:

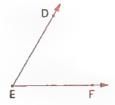
b. Angle type:





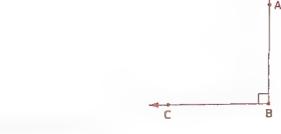
- 4. a. Name of angle: ∠
 - **b.** Type: _____

c. Measure: _____ degrees. [Alex.23]



Lessons 3&4

- 5. In the opposite figure:
 - a. The name of the angle is
 - b. The type of the angle is
 - c. The measure of the angle =



[Kafr El-Sheikh 23]

7. Writing About Math. Rami notices that the open book on the table in the library creates an angle. He says the angle is about 60 degrees. Do you agree with his estimation? Use words and numbers or pictures to explain your thinking.



Multiple Choice Questions

Choose the correct answer.

- A protractor is an instrument used for measuring
 - A. sides
- B. angles
- C. weight
- D. capacity
- 2. The name of the opposite angle is
 - A. ∠ ACB
- B, ∠ABC
- C. ∠BAC
- D. ∠ CBA (Kafr El-Sheikh 23

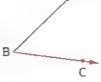
- 3. The vertex of ∠ ABC is
- (Giza 23)

A. A

B. B

C. C

- D. otherwise
- 4. Name the sides of the angle ABC?
 - A. AB, BC
- B. BA, CB
- C. AC, AB
- D. BC, BA



5. One of sides of the angle RHS is

(El-Monofia 23)

A. HR

B. RS

C. SH

D. RH

- 6. What is the possible
- measure of the opposite angle?
 - A. 10°
- **B.** 85°
- C. 90°
- D. 145°

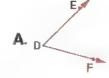
7. The measure of the opposite



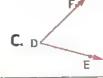
- A. 100°
- B. 120°
- C. 135°
- D. 150°

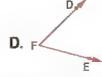
8. Which angle is named as angle DEF?



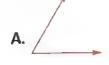








9. Which angle is measured 50°?



В.



10. Which angle is measured 125°?



c. /

D. \



D.



- Drawing Angles
- Drawing Angles with a Protractor
- Classifying Triangles Using Geometric Tools

Learn 1 How do you draw an angle with a given measure?

To draw an angle of measure 70° , follow the instructions :



Draw a point (vertex) and use the straight edge of the protractor to draw a ray starting at this point and extending in one direction.



Align the point (vertex) with the center mark and line up the ray with the zero line.



Determine which scale to use. Think about the type of the angle being drawn and the direction of the ray.



Start with 0° mark. Find the angle measurement and draw a small point at the mark 70°



Remove the protractor and use the straight edge to connect the vertex and the point you marked.

Look at the angle you drew and decide if the drawing is reasonable.

NOtes for parents:

 Remind your child to always identify the type of each angle before draw it as the first thinking step of drawing angles.



Example 1

Use the protractor to draw each of the following angles. Make sure you are using the correct scale.

a. 15°

b. 47°

c. 124°

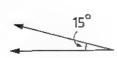
d. 163°

Solution 🕎



Note that: Angles direction may vary

a.







Example 2

Use what you know about acute, obtuse, right and straight angles, along with benchmark angles to draw an estimate of each angle.

a. 50°

b. 80°

c. 120°

d. 175°

Solution 🕎





- Acute angles are less than 90°
- Right angles are measured 90°
- Obtuse angles are greater than 90°
- Straight angles are measured 180°

a.







d.





your understanding

Use the protractor to draw each of the following angles:

a, 45°



b. 112°



Give your child more angle measurements and ask him/her to follow the instructions to draw them in the right way.

Learn (2)

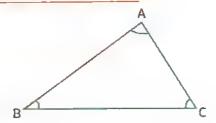
How to classify triangles using a ruler and protractor



The triangle is a polygon which has three sides.

The opposite figure represents a triangle ABC

- Its sides are AB, BC and CA
- Its vertices are A, B and C
- Its angles are ∠ A , ∠ B and ∠ C



Types of triangles according to the **lengths** of its sides

1. Equilateral triangle



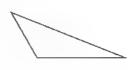
- Its three sides are equal in length.
- Its three angles are equal in measure [60° each].

2. Isosceles triangle



Two of its sides are equal in length.

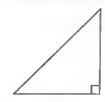
Scalene triangle



 Its three sides are different in length.

Types of triangles according to the measures of its angles

1. Right-angled triangle



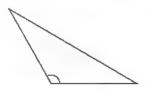
- One of its angles is a right angle.
- Each of the two other angles is an acute angle.

2. Acute-angled triangle



 Each of its three angles is an acute angle.

3. Obtuse-angled triangle



- One of its angles is an obtuse angle.
- Each of the two other angles is an acute angle.

Notes for parents:

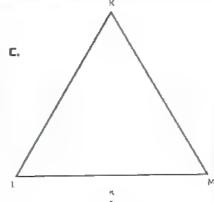
Ask your child can a right triangle also can be an isosceles triangle? Explain.

Example 3

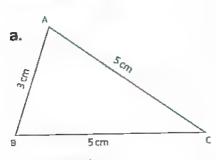
Use a ruler to measure the side lengths of each of the following triangles, then determine the type of each triangle according to its sides.

a.

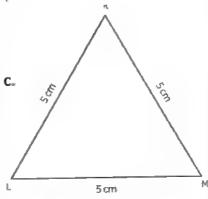
b. X



Solution [



 △ ABC is an isosceles triangle. ∆XYZ is a scalene triangle.



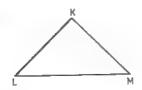
 Δ KLM is an equilateral triangle.

Example 4

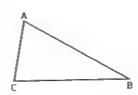
Use a protractor to measure the angles of each of the following triangles, then determine the type of triangle according to its angles.

a.

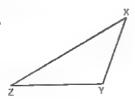
a.



b.



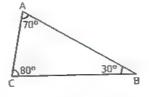
C.



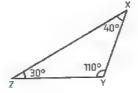
Solution 👰



 ∆ KLM is a right triangle. b.



 ▲ ABC is an acute triangle. c.



 ∆XYZ is an obtuse triangle.



:-

your understanding

By using your geometric instrument, determine the type of the triangle according to its sides and angles.

a.



b.

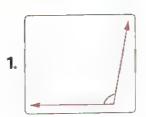


Notes for parents:

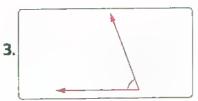
Help your child to use his/her protractor in measuring each angle in the triangle.

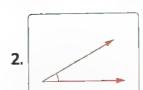
- المراجعة المراجعة المراجعة المراجعة
- Drawing Angles with a Protractor
- Cossifying himpers I say Jeen little on a
- REMEMBER
- 🙀 Ç.COTRSTANO
- OAFF
- PROBLEM SOLVING
- From the school book

1. Match each angle to the best estimation.



a. 30°





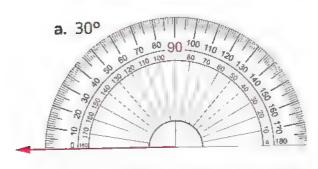
b. 140°

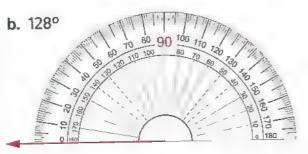


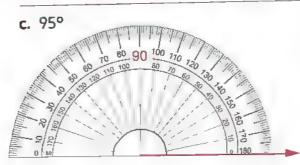


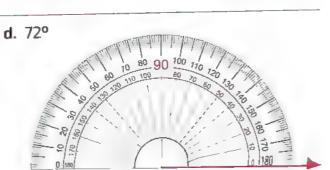
- **d**. 100°
- 5.
- **e**. 160°
- 2. Mark each given angle on the protractor.

[Hint: Make sure you are using the correct scale]







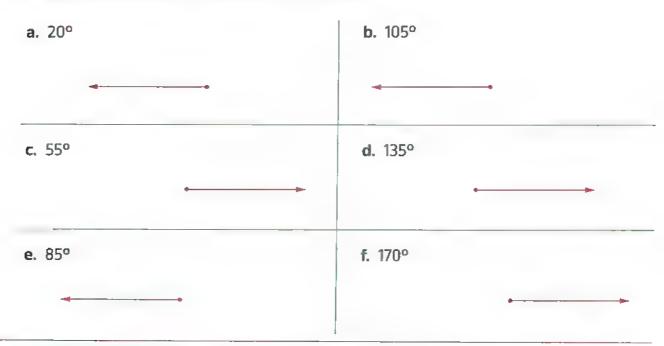






Complete drawing the following angles using the protractor.

[Hint: Make sure you are using the correct scale]



4. Drawing Angle Estimates. Use what you know about acute, obtuse, right and straight angles, along with benchmark angles to draw an estimate of each angle.

5. Drawing angles with a protractor. Use your protractor to draw an angle with the given measurement.

(Giza 23,

, 1	angles. Use your buildi		
measurement pro	ovided. Next, use your (protractor to measure	the angle you created to
check your work.			
a. 60°	b. 30°	c. 90°	d. 140°
e. 105°	f. 165°	g. 125°	h. 80°

a. 58°	f numbers you are using is increasing or decreasing. b. 27°
c. 94°	d. 148°
e. 106°	f. 172°

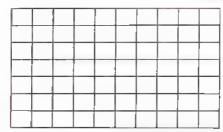
g. 122°

h. 78°

- 8. Answer each of the following.
 - Use the protractor
 to draw the following angle

Measure: 90°

[El-Monofia 23]



Type:

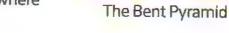
b. Draw angle its measure 60° then write its type.

[El-Monofia 23]

c. Draw (∠ ABC) with measure 80°, and write its type.

[Cairo 23]

- 9. Writing about Math. Why is using estimation important when deciding if your angle is reasonable? What strategies do you use to estimate? Explain your thinking using words and numbers or pictures.
- 20. Angles in Ancient Egypt. The Bent Pyramid of Pharaoh
 Sneferu was built in Dahshur nearly 5,000 years ago. The walls
 at the base of the pyramid were built at about a 54° angle. At
 about 47 meters above the ground, the angle changes to 43°.
 Use your protractor to draw a 54° angle and a 43° angle. Label
 each angle with its measurement. Then, name a place where
 you can see angles in your community.



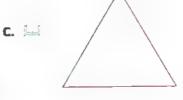
a. 54°

b. 43°

11. Use a ruler to measure the side lengths of each of the following triangles, then determine the type of each triangle according to its sides.



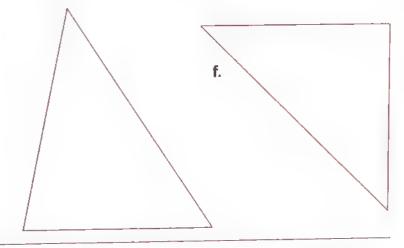




d.

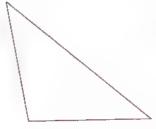


e.

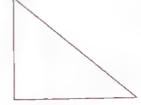


12. Use a protractor to measure the angles of each of the following triangles, then determine the type of each triangle according to its angles.

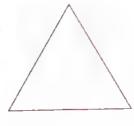
a.



b.

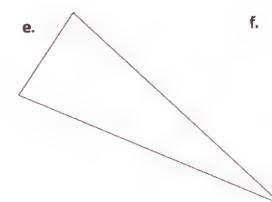


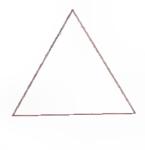
C.



d.

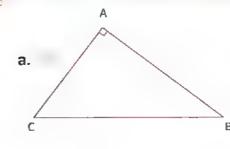




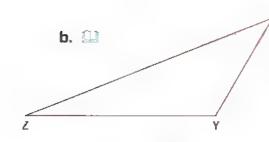


13. Consider the following triangles (using your geometric instrument).

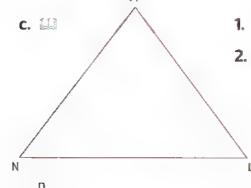
Х



- Type of ∆ ABC with respect to its sides –
- 2. Type of \triangle ABC with respect to its angles



- 1. Type of \triangle XYZ according to its sides
- **2.** Type of \triangle XYZ according to its angles



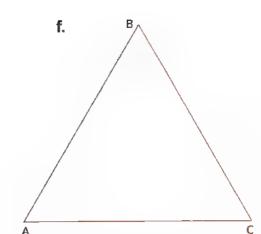
- 1. Type of ∆ MLN according to its sides
- **2.** Type of \triangle MLN according to its angles

d.

- 1. Type of Δ DEF according to its sides
- **2.** Type of \triangle DEF according to its angles



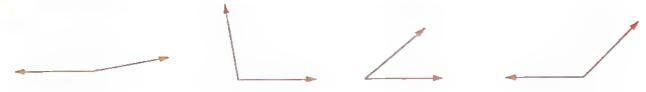
- 1. Type of \triangle PQR according to its sides
- 2. Type of △ PQR according to its angles



- 1. Type of △ ABC according to its sides ____
- 2. Type of Δ ABC according to its angles

Choose the correct answer.

1. Without using protractor, an angle with measure 140° is drawn as



A.

B.

C.

D.

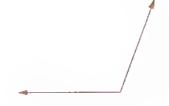
2. The estimate measure of the opposite angle is

A. 20°

B. 85°

C. 120°

D. 170°



3. The type of the triangle ABC according to

its sides is

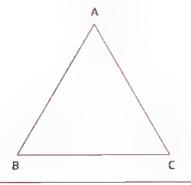
triangle.

A. an equilateral

B. an isosceles

C. a scalene

D. an acute



4. The type of the triangle XYZ according to

its angles is

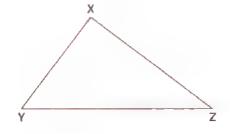
triangle.

A. an acute

B. a right

C. an obtuse

D. an isosceles



Unit Thirteen Assessment



1 Choose the correct answer.

- angle measures 180°
 - A. An acute
 - C. An obtuse
- 2. The best measure estimation of the opposite angle is
 - **A.** 40°
 - **C**. 130°
- 3. The angle of measure 180° represents
 - A. $\frac{1}{4}$ of a full rotation.
 - C. $\frac{1}{3}$ of a full rotation.
- 4. Which angle is measured 125°?





C.



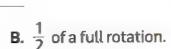
5. The fraction which represents

- **A.** $\frac{1}{3}$
- c. 1/4

D. Astraight

B. A right

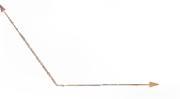
- B. 90°
- **D.** 170°



- **D.** $\frac{3}{4}$ of a full rotation.
- B.



D.



- the colored part equals



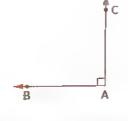
- angle measures between 0° and 90°.
 - A. An acute
- B. Aright
- C. An obtuse
- D. A straight
- 7. The measure of the straight angle is -
 - A. 90

- **B.** 100
- **C.** 150
- **D.** 180

2 Complete.

- 1. The two sides of the opposite angle
- and
- 2. An obtuse angle measures between -





- 4. The opposite angle named as
 - and
- 5. The measure of the opposite angle =



[Kafr El-Sheikh 23]

[El-Beheira 23]

- 6. The angle of the shaded part of the model =
- A right angle measured
- 8. There are degrees in a circle.

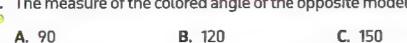


(Port Said 23)

Choose the correct answer.

C. CAB

1. The measure of the colored angle of the opposite model is





- 2. The opposite angle is named as angle
- - B. BCA A. ABC
 - D. CBA



- B. 90 A. zero **C**. 180
- 4. The measure of the opposite angle is
 - **A.** 75 **B**. 105
 - C. 55 D. 95
- angle is $\frac{1}{4}$ of the circle.
 - A. An acute
 - B. An obtuse C. A right
- D. Astraight

D. 360

- 6. The related fraction to the angle of measure 120° is
- A. 1

B. $\frac{1}{4}$

c. $\frac{1}{3}$

right angles.

D. $\frac{1}{2}$

- 7. The straight angle is the same as
 - . 1
- **B**. 2

C. 3

D. 4

- Answer the following questions.
 - 1. Draw \angle ABC with measure of 127° and classify it by its type.
 - 2. Measure each of the following angles, then classify each angle by its type.

a.



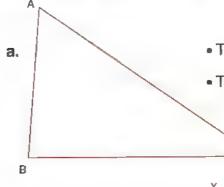
b.



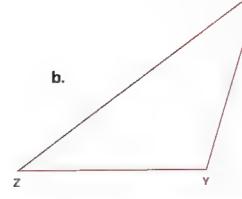
Ċ.



3. Consider the following triangles (using your geometric instrument).



- \bullet Type of Δ ABC with respect to its sides
- \bullet Type of Δ ABC with respect to its angles



- Type of ∆ XYZ with respect to its sides
- ullet Type of Δ XYZ with respect to its angles
- 4. Move from 0° in the given direction. Then label 90° , 180° , 270° and 360° on each circle.

a.

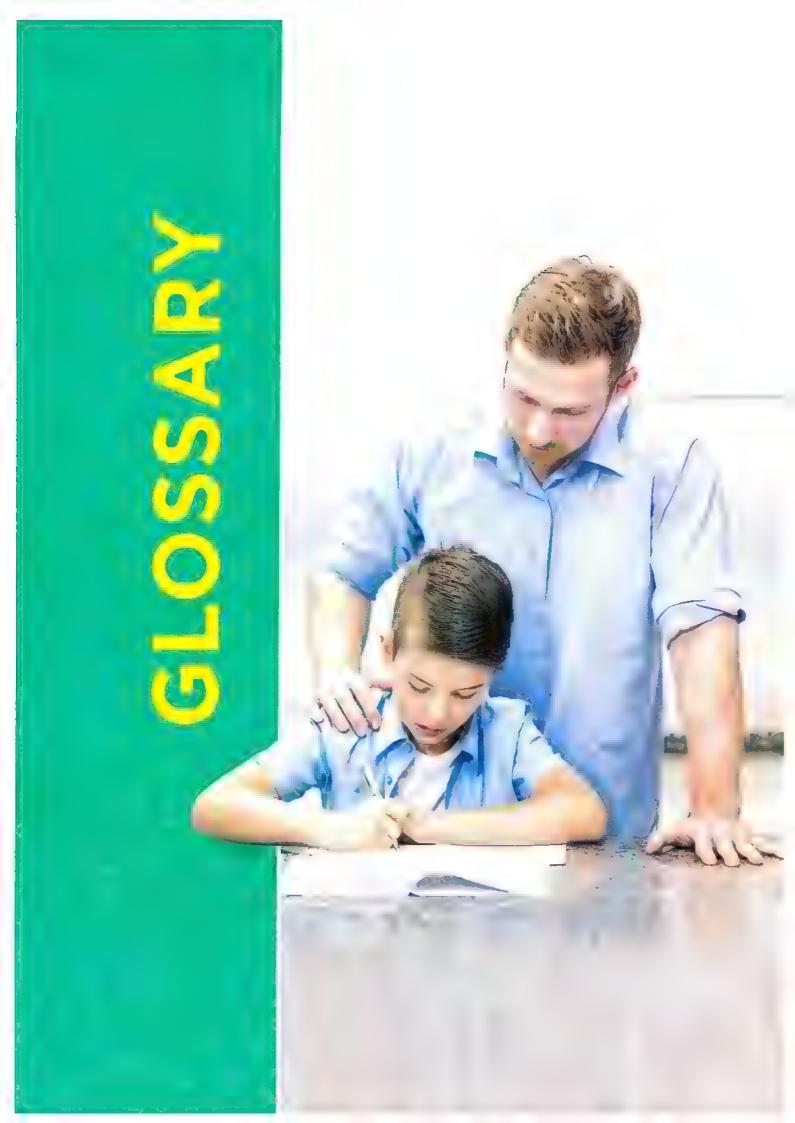


b.



C.







acute angle

زاوية حادة

An angle with a measure less than 90°.

acute triangle

مثلث حاد الزوايا

A triangle with no angle measuring 90° or more.

add

يجمع

To combine or join together; put together two or more quantities.

analyze

يحلل

To study or examine something in detail.

angle

زاوية

Two rays that share an endpoint.

angle measure

قيأس الزاوية

It tells how far one side is turned from the other side.



bar model.

نموذج شريطي

A model that uses bars to represent known and unknown quantities and the relationship between these quantities.

benchmark fractions

كسور معتارية

Fractions that are commonly used for estimation. A benchmark fractions helps you compare two fractions.

One-half, one-third, one fourth, three-fourths, and two-thirds are all benchmark fractions.





سنتيمتر (سم)

A metric unit of length equal to $0.01 \left[\frac{1}{100}\right]$ of a meter.

circle

دائرة

A plane figure with all points at the same distance from a fixed point called a center.

classify

يُصنف

To sort into categories or to arrange into groups by attributes.

clockwise

مع اتجاه عقارت الساعة

The same direction in which the hands on a clock move.

common denominator

مقام مشترك

For two or more fractions, a common denominator is a common multiple of the denominators. Three-fourths and two-fourths have four as a common denominator.

common numerator

بسط مشترك

For two or more fractions, a common nomerator is a common multiple of the numerators.

compare

يقارن

To decide if one number is greater than, less than, or equal to.

compose

بكوّن

To put together smaller numbers to make larger numbers.

congruent

مطابق

Having exactly the same size and shape.

counterclockwise

في عكس اتجاه عقارب الساعة

The opposite direction from the direction that the hands move on a clock.



data

بيانات

A collection of information gathered for a purpose. Data may be in the form of either words or numbers.

decimal

کسر عشری

A number with one or more digits to the right of a decimal point. In 7.46, forty-six hundredths is the decimal or fraction of the whole.

decimal fraction

کسر عشری

A fractional number with a denominator of 10 or a power of 10. It can be written with a decimal point.

decimal notation

صيغة عشرية

Uses digits 0-9 and a decimal point.

For example: 23.56 is in decimal notation.

Glossary

decimal point

علامة عشرية

A dot [.] separating the whole number from the fractions [parts] in decimal notation.

decimeter (dm)

ديسيمتر [ديسم]

A metric unit of length. 1 decimeter = 0.1 meter; 10 decimeters = 1 meter. A hand span is about 1 decimeter.

decompose

يحلل

To separate a number into two or more parts.

degree (angle measure) درجة (وحدة قياس الزاوية)
A unit for measuring angles. It is based on dividing one complete circle into 360 equal parts.
A one degree angle = $\frac{1}{360}$ of a circle.

denominator

مقام

The quantity below the line in a fraction. It tells how many equal parts are in the whole.

diagonal

قطر

فرق

A line that goes through two vertices of a polygon that are not next to each other.

difference

The amount that remains after one quantity is subtracted from another. The answer in a subtraction problem.



equal

يسأوي

Having the same value.

endpoint

طة تمايا

A point at either end of a line segment, or a point at one end of a ray.

equivalent decimals

كسور عشرية متكافئة

Decimals that have the same value, 0.7 = 0.70.

equivalent fractions

كسور متكافئة

Fractions that have the same value. $\frac{1}{2} = \frac{2}{4}$

estimate

يُقدّر

To find a number close to an exact amount; an estimate tells about how much or about how many.

expanded form

صيغة ممتدة

A way to write numbers that shows the value of each digit. 263 = 200 + 60 + 3

fraction

كسر

A way to describe a part of a whole or a part of a group by using equal parts.

greater than [>]

أكبر من

Used to compare two numbers when the first number is larger than the second number.

H

hexagon

الشكل السداسي

A polygon with six sides.

horizontal

أفقى

Parallel to the horizon. Horizontal lines go from left to right or right to left.

Hundreds

مئات

The value of a digit that is the third position from the right when describing whole number place value.

hundredth

جزء من مائة

One of the equal parts when a whole is divided into 100 equal parts.

Hundredths

أجزاء من المائة

In the decimal numeration system, Hundredths is the name of the next place to the right of Tenths.

identify

حدد

Recognize or distinguish, figure out what it is, name it.

interpret

.....

To explain or tell the meaning of something.

intersecting lines

خطوط متقاطعة

Lines that cross at a point

improper fraction

كسر غير اعتيادي

A fraction with a numerator greater than or equal to the denominator. $\frac{\delta}{\epsilon}$



justify

يبرر

To show or prove to be right or reasonable.



kilogram (kg)

كيلوجرام [كجم]

A metric unit of mass equal to 1,000 grams.

kilometer (km)

كيلومتر (كم)

A metric unit of length equal to 1,000 meters.



length

طول

How long something is. The distance from one point to another. Length is measured in units such as centimeters, meters, and kilometers. One dimension of a 2-dimensional or 3-dimensional figure.

less than [<]

أقل من

Used to compare two numbers when the first number is smaller than the second number.

like denominators

متحدة المقام

Denominators in two or more fractions that are the same.

like numerators

متحدة البسط

Numerators in two or more fractions that are the same.

line

خط

A set of connected points continuing without end in both directions.

line of symmetry

خط التماثل

A line that divides a figure into two congruent halves that are mirror images of each other.

line plot

مخطط التمثيل بالنقاط

A diagram showing frequency of data on a number line.

line segment

قطعة مستقيمة

A part of a line with two endpoints.

M

meter (m)

متر [م]

A standard unit of length in the metric system.

mixed number

عدد کسری

A number that is made up of a whole number and a proper fraction.

model or visual model

نموذج أو نموذج مرئى

A picture or representation of a solution, a number, or a concept.

multiply

بضرب

The operation of repeated addition of the same number. $3 \times 5 = 5 + 5 + 5$

N

number line

خط الأعداد

A diagram that represents numbers as points on a line.

numerator

تسط

The number written above the line in a fraction. It tells how many equal parts are described in the fraction.



obtuse angle

راوية منفرجة

An angle with a measure greater that 90° but less than 180°.

obtuse triangle

مثلث منفرج الزاوية

A triangle that contains one angle with a measure greater than 90° (obtuse angle) and two acute angles.

Ones

أحاد

The value of a digit that is farthest to the right when describing whole number place value.

order

یرتب / ترتیب

A sequence or arrangement of things.



parallel lines

خطوط متوازية

Lines that are always the same distance apart. They do not intersect.

Glossary

parallelogram

متوازي أضلاع

A quadrilateral with two pairs of parallel and congruent sides.

perimeter

بحيط

The distance around the outside of a figure.

perpendicular lines

خطوط متعامدة

Two intersecting lines that form right angles.

place value

قيمة مكانبة

The value of the place of a digit in a number.

plane figure

شكل مستوى

A two-dimensional figure.

point

نقطة

The exact location in space, represented by a dot.

polygon

مضلع

A closed two-dimensional shape with 3 or more sides.

product

ناتج الضرب

The answer to a multiplication problem. In $6 \times 7 = 42,42$ is the product, or answer.

proper fraction

كسر اعتيادي اقل من ا

A fraction with numerator less than the denominator. $\frac{5}{6}$

protractor

منقلة

A tool used to measure and draw angles.

Q

quadrilateral

شكل رباعي

A polygon with four sides.

R

recognize

حرك

Identify [someone or something] from having encountered them before; know again, remember.

rectangle

مستطيل

A quadrilateral with two pairs of congruent, parallel sides and four equal angles. regular polygon

مضلع منتظم

A polygon with all sides the same length and all angles the same measure.

represent

يعرض/يمثل

To show or model.

rhombus

معين

A quadrilateral with all four sides equal in length.

right angle

زاوية قاثمة

An angle that measures exactly 90°.

right triangle

مثلث قائم الزاوية

A triangle that has one 90° angle.

S

simplest form

أبسط صورة

When a fraction is expressed with the fewest possible pieces, it is in simplest form [also known as lowest terms].

simplify

يبسط

To express a fraction in simplest form.

square

مربع

A parallelogram with four equal angles and four equal sides.

straight angle

زاوية مستقيمة

An angle that measures exactly 180°.

standard form

صبغة قياسية

A common or usual way of writing a number using digits. 12,376 is in standard form.

subtract

يطرح

An operation that gives the difference between two numbers. Subtraction can be used to compare two numbers, or to find out how much is left after some is taken away.

sum

مجموع

The answer to an addition problem.

symmetrical figures

اشكال متماثلة

Figures that can be folded in half and its two parts match exactly.

أعداد صحيحة

T

عشرات Tens

The value of a digit that is the second position from the right when describing whole number place value.

جزء من عشرة tenth

One of the equal parts when a whole is divided into 10 equal parts.

أجزاء من عشرة أجزاء من عشرة

In the decimal numeration, tenths is the name of the place to the right of the decimal point.

شبه منحرف trapezium

A quadrilateral with one pair of parallel sides and one pair of sides that are not parallel.

مثلث triangle

A polygon with three sides and three angles.

ثنائی الأبعاد two-dimensional

Having length and width.

unit fraction کسر الوحدة

A fraction that has 1 as its numerator. A unit fraction names 1 equal part of a whole.

غير متحدة المقام unlike denominators

Bottom numbers of a fraction that are not equal.

غير متحدة البسط unlike numerators

Top numbers of a fraction that are not equal.

V

vertex [plural: vertices]

رأس [رؤوس]

The point at which two line segments, lines, or rays meet to form an angle.

رأسى vertical

Perpendicular to the horizon. Vertical lines go up and down.



عرض width

One dimension of a 2-dimensional or 3 dimensional figur.

whole کامل

All of an object, a group of objects, shape or quantity.

whole numbers

The numbers 0,1,2,3 and so on, without fractions or decimals.

A way of using words to write a number. The word form of 12,345 is twelve thousand, three hundred forty-five.



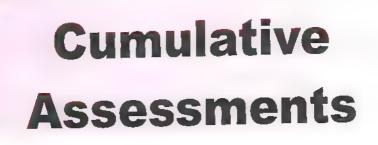
Mathematics

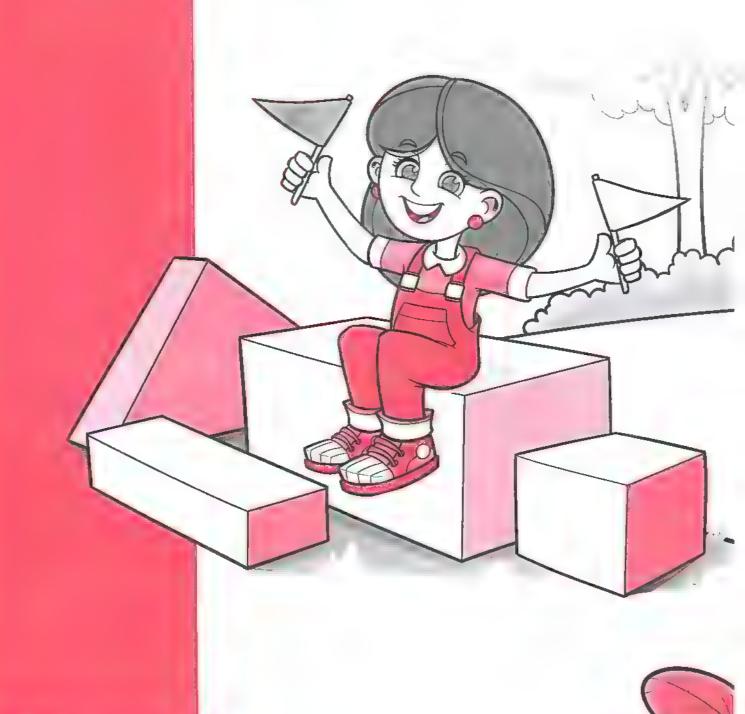


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on United

Cumulative Assessment



On lessons (1 to 3) unit 9

Choose the correct answer.

a.
$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = -$$

- A. $\frac{2}{7}$ B. $\frac{3}{7}$
- C. $\frac{4}{7}$

D. 5

b. The model which represents $\frac{3}{4}$ is







c. Which of the following is not a unit fraction?

- A. $\frac{1}{3}$
- B. $\frac{2}{7}$

D. $\frac{1}{4}$

d. 1 =

A.
$$\frac{5}{7}$$

B. $\frac{7}{7}$

C. $\frac{1}{2}$

D. $\frac{1}{10}$

2. Decompose the following proper fractions in two ways.

First way

a.
$$\frac{3}{4} =$$

Second way

3. Complete.

a.
$$\frac{3}{5} = \frac{2}{5} + \cdots$$

c.
$$\frac{1}{3} = 1$$

e.
$$\frac{1}{6} + \frac{2}{6} + = 1$$

b.
$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} =$$

4. Draw a model that represents one way of decomposing the following fractions.

a. 3



Till lesson 4 unit 9

1. Complete.

a.
$$\frac{5}{3} =$$
 [as a mixed number]

c.
$$\frac{5}{8} = \frac{1}{8} + \frac{3}{8} + \cdots$$

e.
$$\frac{1}{5} = 2$$

a.
$$\frac{5}{3} =$$
 [as a mixed number] b. $4\frac{1}{5} =$ [as an improper fraction]

d.
$$\frac{2}{7} + \frac{3}{7} + \frac{1}{7} = -$$

f.
$$\frac{9}{1} = 1$$

2. Choose the correct answer.

a. Which of the following is a mixed number?

A.
$$\frac{3}{5}$$

B. $\frac{4}{3}$

C. $3\frac{1}{2}$

D. $\frac{1}{4}$

C. $\frac{13}{5}$

D. $\frac{35}{7}$

c.
$$\frac{2}{3}$$
 is _____

A. a unit fraction

C. an improper fraction

B. a mixed number

D. a proper fraction

d. Which of the following has the same value as $\frac{5}{7}$?

A.
$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$$

C.
$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$$

B.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

D.
$$\frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \frac{4}{7} + \frac{5}{7}$$

e.
$$\frac{6}{}$$
 = 2

A. 1

B. 2

C. 3

D. 4

f.
$$\frac{5}{2}$$
 is ______

A. a unit fraction

B. a mixed number

C. an improper fraction

D. a proper fraction

3. Write the opposite fraction in the form of an improper fraction and a mixed number.

Improper fraction:

Mixed number:





4. Write each mixed number as an improper fraction.

a. $5\frac{7}{8}$

b. $3\frac{2}{7}$

c, $2\frac{5}{9}$

5. Write each improper fraction as a mixed number.

b. $\frac{18}{5}$



Till lessons (5 to 7) unit 9

1. Complete.

a.
$$7\frac{5}{7}$$
 - = $3\frac{1}{7}$

c.
$$8\frac{5}{6} + - = 9$$

e.
$$\frac{8}{}$$
 = 2

b.
$$-4\frac{1}{3} = 3\frac{2}{3}$$

f.
$$4\frac{2}{3} = \frac{1}{3}$$

2. Choose the correct answer.

a.
$$3 + \frac{2}{5} + 1 + \frac{1}{5} =$$

A.
$$2\frac{3}{5}$$

B.
$$4\frac{3}{5}$$

D.
$$\frac{7}{5}$$

b.
$$7\frac{4}{7} - 3\frac{3}{7} = -$$

A.
$$10\frac{1}{7}$$
 B. $4\frac{7}{7}$

B.
$$4\frac{7}{7}$$

c. Which one of the following statements is true?

A.
$$\frac{3}{7} + \frac{1}{7} = \frac{4}{14}$$

B.
$$2\frac{1}{5} + 1\frac{2}{5} = 3\frac{3}{5}$$

c.
$$3\frac{1}{2} = \frac{6}{2}$$

D.
$$3\frac{2}{4} - 1\frac{1}{4} = 2\frac{3}{4}$$

d. Which of the following is an improper fraction?

B.
$$\frac{1}{4}$$

C.
$$2\frac{1}{5}$$

D.
$$\frac{7}{3}$$

e.
$$\frac{3}{7}$$
+

e.
$$\frac{3}{7}$$
 + $+\frac{1}{7} = \frac{5}{7}$

A.
$$\frac{1}{7}$$

C.
$$\frac{3}{7}$$

D.
$$\frac{4}{7}$$

3. Solve each of the following. You may draw models to help.

a.
$$4\frac{2}{5} + 3\frac{3}{5} = -$$

c.
$$4-2\frac{1}{4}=$$

e.
$$1-\frac{2}{9}-\frac{4}{9}=$$

b.
$$4\frac{4}{7} - 2\frac{2}{7} =$$

d.
$$1+2+\frac{3}{8}+\frac{4}{8}+\frac{3}{8}=$$

f.
$$\frac{4}{5} + 2\frac{1}{5} =$$

4. Petra has $5\frac{3}{4}$ cakes, she gave $3\frac{1}{4}$ to her brother. How many cakes left does she has?



Choose the correct answer.

a. Which of the following fractions is the greatest?

A.
$$\frac{2}{5}$$

B.
$$\frac{2}{7}$$

C.
$$\frac{2}{3}$$

A.
$$\frac{5}{8}$$

B.
$$\frac{3}{7}$$

$$C. \frac{3}{9}$$

D.
$$\frac{7}{8}$$

c. $3\frac{1}{4} =$ [as an improper fraction]

A.
$$\frac{13}{3}$$

B.
$$\frac{13}{4}$$

c.
$$\frac{12}{4}$$

D.
$$\frac{8}{4}$$

d.
$$\frac{5}{8}$$
 B. $\frac{5}{7}$

A.
$$\frac{5}{8}$$

D.
$$\frac{5}{10}$$

e.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$$

A.
$$\frac{3}{5}$$

B.
$$\frac{3}{15}$$

$$c. \frac{1}{15}$$

D.
$$\frac{3}{25}$$

2. Complete.

a.
$$-3\frac{1}{3}=1\frac{1}{3}$$

c.
$$3\frac{2}{5} + \cdots = 4\frac{3}{5}$$

e.
$$-\frac{1}{7} = 1$$

g.
$$\frac{4}{5} = \frac{3}{5} + - - - -$$

b.
$$4\frac{4}{5}$$
 - - = $1\frac{1}{5}$

d.
$$---+1\frac{1}{7}=2$$

f.
$$\frac{-}{3} = 5$$

h.
$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = -$$

j.
$$\frac{9}{5} =$$
 [as a mixed number]

3. Solve the problems.

a.
$$2\frac{3}{5} + 1\frac{4}{5} = -$$

b.
$$6\frac{4}{7} - 3\frac{3}{7} = ----$$

d.
$$3-1\frac{5}{8}=$$

4. a. Order the following fractions in an ascending order.

$$\frac{7}{10}$$
, $\frac{3}{10}$, $\frac{1}{10}$, $\frac{9}{10}$, $\frac{6}{10}$

b. Order the following fractions in a descending order.

$$\frac{11}{7}$$
, $\frac{11}{3}$, $\frac{11}{5}$, $\frac{11}{8}$, $\frac{11}{4}$



Till lesson 9 unit 9

- Choose the correct answer.
 - a. Which of the following is a unit fraction?

A.
$$\frac{3}{7}$$

B.
$$\frac{2}{5}$$

c.
$$\frac{3}{8}$$

b.
$$\frac{3}{1} = 1$$

c.
$$\frac{19}{4} = \frac{19}{4}$$
 [as a mixed number]

A.
$$4\frac{3}{4}$$
 B. $4\frac{1}{4}$

B.
$$4\frac{1}{4}$$

C.
$$5\frac{1}{4}$$

D.
$$3\frac{3}{4}$$

d.
$$3+\frac{2}{7}+5+\frac{2}{7}=$$

A.
$$8\frac{2}{7}$$

A.
$$8\frac{2}{7}$$
 B. $8\frac{2}{14}$

C.
$$8\frac{4}{7}$$

e. What is the equivalent fraction to $\frac{1}{3}$?

A.
$$\frac{2}{6}$$
 C. $\frac{2}{8}$

B.
$$\frac{4}{6}$$

c.
$$\frac{2}{8}$$

D.
$$\frac{3}{9}$$



2. Write the missing numerator or denominator.

a.
$$\frac{2}{3} = \frac{\Box}{6}$$



b.
$$\frac{5}{8} = \frac{10}{10}$$



c.
$$\frac{3}{5} = \frac{\square}{10}$$



3. Complete.

a.
$$\frac{3}{4} = \frac{1}{4} + \frac{1}{4} +$$

c.
$$2\frac{3}{5} =$$
 [as an improper fraction]

e.
$$2 - \frac{1}{3} - \frac{1}{3} = ---$$

g.
$$\frac{7}{7} = \frac{5}{-}$$

b.
$$1-\frac{3}{7}=$$
 —

d.
$$\frac{14}{4} = 7$$

f. Three tenths =
$$\frac{2}{10}$$
 +

- h. The numerator of a proper fraction is _____ than its denominator.
- 4. Sara ate $1\frac{1}{3}$ of a chocolate cake and her brother Adel ate $\frac{4}{3}$ of a cake of the same size. Draw and color a model for each one of them, then show who ate more cake Sara or Adel?



Till lessons (10&11) unit 9

1. Choose the correct answer.

a.
$$1\frac{4}{7} + 5\frac{2}{7} = -$$

A.
$$6\frac{6}{14}$$
 B. $6\frac{8}{7}$

B.
$$6\frac{8}{7}$$

C. 6
$$\frac{6}{7}$$

D.
$$7\frac{6}{7}$$

b.
$$\frac{13}{7}$$
 $\frac{13}{5}$

c.
$$\frac{6}{11}$$
 $\frac{4}{11}$

d. Which of the following is an improper fraction?

A.
$$\frac{1}{5}$$

B.
$$\frac{11}{2}$$

c.
$$5\frac{1}{2}$$

D.
$$\frac{3}{5}$$

e.
$$\frac{3}{4} = ---$$

A.
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$
 B. $\frac{1}{3} + \frac{1}{3} + \frac{1}{3}$ C. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ D. $\frac{3}{4} + \frac{3}{4} + \frac{3}{4}$

B.
$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3}$$

C.
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

$$p. \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$$

f. Which of the following fractions is closest to 1?

A.
$$\frac{1}{7}$$

B.
$$\frac{2}{11}$$

D.
$$\frac{10}{11}$$

g. Which of the following fractions is less than $\frac{1}{2}$?

A.
$$\frac{3}{3}$$

B.
$$\frac{5}{6}$$

c.
$$\frac{3}{8}$$

D.
$$\frac{6}{12}$$

2. Find the result of each of the following.

a.
$$2 + \frac{2}{9} + 4 + \frac{5}{9} = -$$

b.
$$7\frac{3}{5} - 5\frac{1}{5} = \cdots$$

c.
$$2 - \frac{1}{4} - \frac{1}{4} = -$$

b.
$$7\frac{3}{5} - 5\frac{1}{5} =$$
d. $5 - 2\frac{3}{4} =$

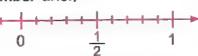
e.
$$7\frac{2}{7} + \frac{4}{7} = -----$$

f.
$$\frac{3}{7} + \frac{1}{7} + \frac{1}{7} = -$$

3. Write weather the fraction is closest to 0, $\frac{1}{2}$ or 1 (use the number line.)

a.
$$\frac{3}{10}$$

b.
$$\frac{9}{10}$$



c.
$$\frac{1}{10}$$

d.
$$\frac{6}{10}$$

4. Use benchmark fractions 0,
$$\frac{1}{2}$$
 and 1 to order each group of fractions.

a.
$$\frac{1}{7}, \frac{8}{8}, \frac{5}{6}$$

b.
$$\frac{5}{6}$$
, $\frac{1}{9}$, $\frac{7}{7}$, $\frac{5}{10}$



Till lessons (12 to 14) unit 9

Choose the correct answer.

a.
$$\frac{5}{7}$$
 <

B. $\frac{3}{7}$

c. 1

D, $\frac{1}{0}$

b.
$$\frac{3}{9} + \frac{1}{9} + 2 =$$

A. $2\frac{4}{9}$

B. $2\frac{4}{18}$

C. $\frac{6}{9}$

D. $2\frac{3}{9}$

c.
$$5\frac{1}{4} =$$

A. $\frac{20}{4}$

B. $\frac{22}{4}$

c. $\frac{21}{4}$

D. $\frac{19}{4}$

d.
$$5-2\frac{1}{5}=$$

A. $2\frac{1}{5}$

B. 3 5

C. $2\frac{4}{5}$

D. $2\frac{3}{5}$

e.
$$\frac{3}{7}$$
 is equivalent to _____

A. 6

B. $\frac{9}{14}$

C. $\frac{9}{21}$

D. $\frac{9}{28}$

2. Write three equivalent fractions to each fraction.

c.
$$\frac{6}{18}$$
 = ----= = -----

3. Complete.

a.
$$\frac{43}{5} = -$$

a.
$$\frac{43}{5} =$$
 [as a mixed number] **b.** $7\frac{2}{5} - 1\frac{1}{5} =$

c.
$$\frac{5}{9} = \frac{1}{27}$$

d. If
$$\frac{4}{4} = \frac{5}{x}$$
, then $x = \frac{1}{4}$

f.
$$\frac{6}{7} \times \frac{3}{3} =$$

- e. $\frac{8}{10} = \frac{4}{-}$
- 4. Use the benchmark fractions $0, \frac{1}{2}$, 1 to order the following fractions from least to greatest.

$$\frac{3}{8}$$
, $\frac{7}{9}$, $\frac{5}{10}$

5. Ahmed has 12 cakes. $\frac{3}{4}$ of them are choclete. How many choclate cake are there?



Till lesson 15 unit 9

1. Complete.

a.
$$3\frac{1}{8} + - - = 7\frac{5}{8}$$

e.
$$\frac{2}{7} = \frac{1}{1} = \frac{1}{1} = \frac{1}{1}$$

b.
$$3\frac{2}{5} =$$
 — [as an improper fraction]

d.
$$\frac{7}{8} = \frac{21}{1}$$

f.
$$\frac{2}{7} \times 3 = ---$$

2. Choose the correct answer.

a.
$$7 \times \frac{1}{4} = -----$$

B.
$$\frac{7}{28}$$

C.
$$\frac{1}{28}$$

D.
$$7\frac{1}{4}$$

b.
$$\frac{3}{11}$$
 b. $\frac{3}{7}$ **b.** $<$

c.
$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \cdots$$

A.
$$\frac{5}{3}$$

A.
$$\frac{5}{3}$$
 B. $\frac{1}{3} \times 4$

C.
$$\frac{4}{12}$$

D.
$$\frac{1}{12}$$

d.
$$1+\frac{2}{7}+\frac{1}{7}+3=$$

A.
$$\frac{7}{7}$$
 B. $\frac{6}{7}$

B.
$$\frac{6}{7}$$

c.
$$7\frac{3}{7}$$

D.
$$4\frac{3}{7}$$

Use models to solve the following problems.

a.
$$1 - \frac{2}{8} =$$

b.
$$2 - \frac{2}{3} =$$

4. Draw a model for each of the following improper fractions. Then write each improper fraction as a mixed number.

a.
$$\frac{7}{3}$$

b.
$$\frac{3}{2}$$

5. Write the multiplication sentence for each of the following.

a.
$$\frac{1}{4} + \frac{1}{4} =$$

b.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{1}{5}$$

c.
$$\frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \frac{1}{9}$$

d.
$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$$

6. How many $\frac{1}{7}$ long wooden pegs can be cut from a plank that is $\frac{6}{7}$ m long?

Till lessons (1&2) unit 10

Choose the correct answer.

$$a. 0.06 =$$

A.
$$\frac{6}{10}$$

C.
$$\frac{6}{100}$$

b.
$$\frac{2}{100}$$
 =

c.
$$\frac{20}{10}$$

c.
$$7 \times \frac{1}{10} =$$

A.
$$\frac{7}{10}$$

C.
$$7 + \frac{1}{10}$$

D.
$$\frac{2}{10} + \frac{6}{10}$$

d.
$$\frac{3}{5} + \frac{1}{5} =$$

A.
$$\frac{4}{10}$$

B.
$$\frac{4}{5}$$

C.
$$3 \times \frac{1}{5}$$

D.
$$\frac{31}{5}$$

e.
$$\frac{18}{1} = 2$$

2. Complete.

a.
$$\frac{42}{8} = ------ [as a mixed number]$$

b.
$$-1\frac{2}{5} = 3\frac{1}{5}$$

d.
$$\frac{5}{5} = \frac{1}{9}$$

e.
$$\frac{7}{100} = ------$$
 (as a decimal)

f.
$$\frac{3}{10} = -----$$
 [as a decimal]

3. Write each of the following as a decimal.

a.
$$\frac{8}{100} =$$

b.
$$\frac{5}{10}$$
 = _____

c.
$$\frac{15}{100}$$
 =

e.
$$\frac{1}{100}$$
 = _____

b.
$$\frac{5}{10} =$$
 c. $\frac{15}{100} =$ e. $\frac{1}{100} =$ f. $\frac{7}{10} =$

4. Write each of the following as a fraction.

e.
$$0.4 =$$



Till lessons (3&4) unit 10

Write the value and the place value of the circled digit in each of the following.

- a. 7.95 ------
- b. 13.73

c. 45①7______

d. 202.94------

2. Write in word form.

- a. 7.18 ———
- **b.** 1+0.7+0.03
- c. 6 Ones and 2 Hundredths -

3. Write in standard form.

- a. 5+0.6+0.02
- b. Seven and eight hundredths —
- c. 4 Ones , 7 Tenths and 4 Hundredths

4. Choose the correct answer.

- a. The place value of the digit 8 in the number 19.28 is
 - **A.** $\frac{8}{10}$
- B. 0.08
- C. Tenths
- D. Hundredths

- b. The value of the digit 5 in the number 3.54 is
 - A. 0.5
- **B.** 0.05
- C. Tenths
- D. Hundredths

c.
$$\frac{5}{3}$$
 $\frac{5}{6}$

- A. >
- B. <

C. =

d.
$$\frac{1}{100} = -$$

- A. 0.1
- **B.** 0.10
- **C.** 0.01
- **D.** 1.01

e.
$$3 \times \frac{1}{4} = -$$

- A. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ B. $\frac{3}{12}$
- C. $3 + \frac{1}{4}$
- **D**. $\frac{3}{4}$

5. Find the result of each of the following.

a.
$$\frac{4}{9} + \frac{1}{9} + 1 + \frac{2}{9} = -$$

b.
$$2 - \frac{1}{3} - \frac{1}{3} =$$

c.
$$2\frac{3}{5} + 3\frac{4}{5} =$$
 —

d.
$$7\frac{4}{7} - 2\frac{1}{7} = ---$$



Till lessons (5&6) unit 10

Choose the correct answer.

b.
$$2\frac{1}{5}+1\frac{2}{5}=$$

A.
$$3\frac{3}{10}$$

B.
$$3\frac{3}{5}$$

C.
$$1\frac{1}{5}$$

D.
$$3\frac{1}{5}$$

C.
$$\frac{47}{10}$$

d.
$$5\frac{2}{10}$$
 =

(as a decimal number)

A.
$$\frac{52}{10}$$

D.
$$2\frac{5}{10}$$

e.
$$\frac{3}{10}$$
 $\frac{3}{100}$

f. The place value of the digit 7 in the number 43.67 is

2. Write each of the following in a fraction form.

Complete.

f.
$$\frac{735}{100}$$
 =

Hundredths

4. Write the fractions: $\frac{5}{10}$, $\frac{5}{12}$, $\frac{5}{11}$, $\frac{5}{15}$, $\frac{5}{7}$ in an ascending order.

5. Mervat has a brother of height 70 $\frac{2}{10}$ cm.

- a. Express the height in the form of a decimal.
- **b.** How can you rewrite $70\frac{2}{10}$ cm using Tenths only?



Till lesson 7 unit 10

1. Choose the correct answer.

a.
$$\frac{7}{9} + \frac{2}{9} = -----$$

 $\frac{1}{2}$ C. $\frac{1}{2}$

D. $\frac{5}{9}$

b. The value of the digit 3 in the number 5.23 is

A. Tenths B. Hundredths

D. $\frac{3}{100}$

A. 0.70

B. $\frac{7}{100}$

C. 0.07

D. 77

d. Which of the following is not equivalent to
$$1\frac{3}{10}$$
?

A. 1.3

B. 1.30

C. 1.03

D. 1 30

e.
$$3\frac{2}{7} = -----$$
 [as an improper fraction]

A. $\frac{42}{7}$ B. $\frac{21}{3}$

c. ¹³/₇

D. $\frac{23}{7}$

2. Complete.

a.
$$7\frac{2}{9} + - - - = 8\frac{1}{9}$$

c.
$$\frac{3}{8} = \frac{18}{-}$$

e.
$$\frac{3}{10}$$
 is equivalent to

g.
$$\frac{5}{7} = \frac{3}{7} + \frac{1}{7} + - - -$$

d.
$$-1\frac{1}{4} = 1\frac{1}{4}$$

h.
$$1-\frac{4}{9}=$$
 ———

L
$$\frac{17}{5}$$
 = ——— (as a mixed number)

3. Write in expanded form each of the following.

a. 3.79 ---

b. Six and four hundredths

c. 4 Ones, 8 Tenths and 9 Hundredths

4. Write an equivalent fraction for each.

a.
$$\frac{4}{10} =$$
 b. $\frac{70}{100} =$ **c.** $\frac{5}{10} =$

c.
$$\frac{5}{10} = -------$$

d.
$$\frac{90}{100} =$$

e.
$$\frac{8}{10}$$
 = -----

d.
$$\frac{90}{100} =$$
 e. $\frac{8}{10} =$ f. $\frac{10}{100} =$



Till lessons (8 & 9) unit 10

1. Complete.

- a. 0.22 = ----- Hundredths
- **b.** $2\frac{1}{11} + 1\frac{2}{11} =$
- c. 3.7 = ——— [as a mixed number]
- d. $4 \times \frac{1}{5} =$
- e. Three and twenty-two hundredths = ---- [as a decimal number]
- f. The value of the digit 7 in the number 3.74 is

2. Choose the correct answer.

- a. 5.03 5 + 0.3
 - A. >
- B. <

 $C_{\cdot} =$

- 24 Tenths **b.** 2.4
 - A. >
- B. <

C. =

- c. 0.3 >
 - A. 0.30 B. 0.25
- **C.** 0.52
- **D**. 0.7

- d. $3 + \frac{1}{5} + 1 + \frac{3}{5} = ---$
 - A. $31\frac{4}{5}$ B. $4\frac{4}{10}$
- C. $4\frac{4}{5}$
- D. 31 13 5

- **e.** $5\frac{7}{11} 3\frac{5}{11} = ---$
 - A. $8\frac{2}{11}$ B. $2\frac{2}{11}$
- C $8\frac{12}{22}$
- D. $2\frac{12}{11}$

- f. 2 Ones and 3 Tenths = -
 - A. 3.2
- **B.** 0.23
- C. 0.32
- D. 2.3
- 3. A rectangle of length $7\frac{1}{6}$ cm and width $2\frac{1}{6}$ cm. Calculate its perimeter.
- 4. Nermine at 0.7 of her food. Her brother at $\frac{3}{10}$ of his food, if they have the same amount of food. Who ate more?



Till lessons (10 & 11) unit 10

1. Find the result.

a.
$$2\frac{5}{10} + 3\frac{21}{100} =$$

c.
$$2\frac{3}{5} + 7\frac{1}{5} = -$$

b.
$$\frac{2}{10} + \frac{21}{100} + 2\frac{5}{10} = -$$

d.
$$\frac{32}{100} + \frac{24}{100} + \frac{7}{10} = -$$

f.
$$2+1\frac{1}{7}+3+4\frac{4}{7}=-$$

2. Complete.

a.
$$\frac{40}{100} = \frac{10}{10}$$

c.
$$\frac{9}{1} = 1$$

e.
$$8\frac{7}{9}$$
 = $2\frac{1}{9}$

d.
$$2 - \frac{1}{3} = ------$$

g. The place value of the digit 7 in the number 13.57 is

3. Choose the correct answer.

a.
$$\frac{7}{10} + \frac{2}{10} = \frac{-}{100}$$

b.
$$\frac{3}{10} + \frac{7}{10} =$$

A.
$$\frac{10}{100}$$

B.
$$\frac{1}{10}$$

A.
$$\frac{10}{100}$$
 B. $\frac{1}{10}$ **c.** $\frac{7}{8}$ >

B.
$$\frac{1}{2}$$

C.
$$1\frac{1}{4}$$

D.
$$\frac{7}{6}$$

d.
$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = -$$

A.
$$\frac{5}{8}$$

B.
$$\frac{5}{40}$$

D.
$$\frac{1}{40}$$

e.
$$\frac{5}{10} + \frac{3}{100} = \frac{}{100}$$

D.
$$1\frac{7}{10}$$

4. Amany has $\frac{7}{10}$ meter of cloth, she went to a shop and bought $\frac{35}{100}$ meter of cloth. How many meters of cloth has Amany now?

OF UNIT 11

Cumulative Assessment



Till lesson 1 unit 11

Toys

Number of items 20 30 20

40 30 20

Choose the correct answer.

- a. The opposite graph shows a
 - A. pictograph.
 - B. line plot.
 - C. bar graph.
 - D. double bar graph.
- b. $\frac{3}{100}$ =
 - A. 0.3
- **B.** 0.03
- **C**.3

D, 30

Sold items

Books

Items

Gifts

2020 2021

- c. $3\frac{1}{3}+1\frac{1}{3}=$
 - A. $4\frac{2}{3}$ B. $4\frac{2}{6}$
- C. $2\frac{2}{6}$
- D. $2\frac{2}{3}$

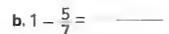
- d. $\frac{7}{9}$ 1
 - A. >

- C. =
- e. Five and one hundredths =
 - A. 5.1
- **B.** 51

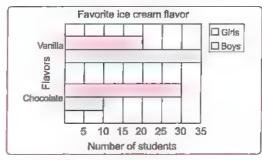
- C. 5.01
- D. $5\frac{1}{10}$

2. Complete.

a. From the opposite double bar graph: The difference of the number of boys between vanilla and chocolate is ---- boys.



d. $7 \times \frac{1}{9} = -$



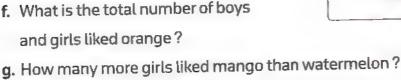
- c. $\frac{6}{10}$ is equivalent to $\frac{-}{100}$
- **e.** $3 + \frac{1}{5} + 2 + \frac{3}{5} =$
- f. The place value of the digit 3 in the number 5.13 is —

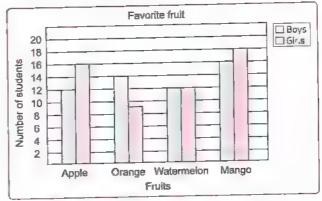
g.
$$\frac{14}{100} = ----- [as a decimal]$$

h. $5\frac{3}{4} =$ [as an improper fraction]

3. The following data shows the favorite fruit between boys and girls. Observe the double bar graph, then answer the questions.

- a. How many boys liked orange?
- b. How many girls liked apple?
- c. Which fruit is liked the most by boys?
- d. Which fruit is liked the least by girls?
- e. Which fruit shows the same number of boys and girls?
- f. What is the total number of boys and girls liked orange?





4. Find the result of each of the following.

a.
$$2\frac{1}{3} + 1\frac{2}{3} = ----$$

c.
$$5 \times \frac{1}{7} = -$$

d.
$$1 - \frac{1}{7} - \frac{2}{7} = ----$$

f.
$$5\frac{7}{8} - 3\frac{5}{8} = -----$$

5. Arrange in an ascending order.

a.
$$\frac{7}{9}$$
 , $\frac{5}{9}$, $\frac{4}{9}$, $\frac{6}{9}$, $\frac{2}{9}$

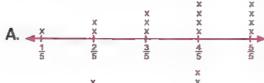
b.
$$\frac{3}{11}$$
 , $\frac{3}{7}$, $\frac{3}{5}$, $\frac{3}{8}$, $\frac{3}{10}$



Till lessons (2 & 3) unit 11

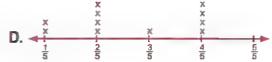
1. Choose the correct answer.

a. The line plot which shows the following data









- b. Fifty-seven hundredths in standard form is ---
 - A. 5.7
- **B.** 0.57
- C. 57
- **D**. 0.75

- c. $\frac{8}{10} = \frac{4}{10}$
 - A. 20
- **B**. 10
- **C**. 5

D, 2

- d. $0 \frac{2}{7}$
 - A. >
- B. <

- C. =
- e. Which of the following fractions is less than $\frac{1}{2}$?
 - A. $\frac{7}{7}$
- **B.** $\frac{9}{10}$
- C. $\frac{1}{4}$
- D. $\frac{4}{8}$

f. The model which represents $\frac{5}{6}$ is ———

A. _____

B. _____

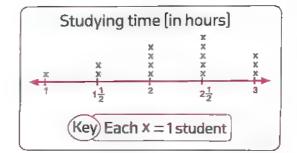
C.

D.

2. Complete.

a. From the opposite line plot:

The number of students who studied 2 hours or more is students.



b.
$$\frac{34}{100} + \frac{4}{10} =$$

d.
$$\frac{7}{8} = \frac{1}{8} + \frac{3}{8} + \cdots$$

f.
$$\frac{19}{5} = ----- [as a mixed number]$$

e.
$$\frac{3}{5} = \frac{3}{15}$$

g.
$$\frac{38}{100} = -------$$
 [as a decimal]

h. The value of the digit 6 in the number 2.16 is

i.
$$5\frac{3}{4} = -----$$
 [as an improper fraction]

3. Find the result.

a.
$$2 - \frac{3}{7} - \frac{4}{7} =$$

b.
$$2\frac{1}{5} + 1\frac{3}{5} = ----$$

d. $1 + 2\frac{1}{7} + 3\frac{4}{7} = ----$

d.
$$1+2\frac{1}{7}+3\frac{4}{7}=$$

4. Arrange in a descending order.

a.
$$\frac{3}{7}$$
 , $\frac{5}{7}$, $\frac{1}{7}$, $\frac{6}{7}$, $\frac{2}{7}$

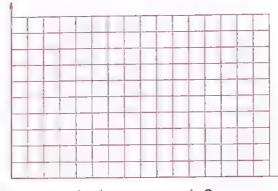
b.
$$\frac{2}{5}$$
 , $\frac{2}{7}$, $\frac{2}{3}$, $\frac{2}{10}$, $\frac{2}{6}$

5. The following data shows the jump distances for 5 students (in meters) in two rounds.

Name Rounds	Noura	Maged	Sama	Youssef	Ramy
1 st Round	1/4	1 1/4	1 3/4	1 3/4	1 1/2
2 nd Round	3 4	1 1 2	2	2 1/4	1

Represent these data, then answer the questions.

- a. Which student jumped the highest distance in the first round?
- b. Which student jumped the highest distance in the second round?
- c. Which student jumped less distance in the second round than the first round?



d. What is the difference between Youssef's jump distances in the two rounds?

on UNIT 12

Cumulative Assessment



Till lessons (1 & 2) unit 12

1. Choose the correct answer.

- a. The name of the opposite figure is
 - A. AB
- B. AB
- C. BA
- D. \overrightarrow{AB}



- b. The opposite two line are
 - A. intersecting
 - B. parallel
 - C. perpendicular
 - D. intersecting and not perpendicular

c. $7\frac{1}{3}$ = (as an improper fraction).

- A. $\frac{22}{3}$
- **B.** $\frac{21}{3}$
- D. $\frac{15}{3}$

- d. $\frac{3}{7}$ $\frac{3}{5}$
- B. <

C. =

- **e.** $3\frac{2}{10} = 3\frac{2}{100}$
 - A. 2,000
- **B.** 200
- C. 20
- D. 2

- f. 3.2 =
- tenths.
- A. 3.2
- **B.** 320
- C. 302
- **D**. 32

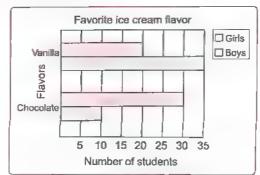
2. Complete.

- a. The name of -► is a -
- b. The two lines -
- c. $7 \times \frac{1}{9} = -$

- **d.** $\frac{2}{10} + \frac{31}{100} =$
- e. From the opposite double bar graph:

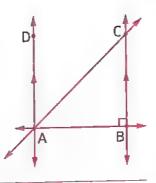
The sum of the number of

boys in vanilla and chocolate is ___



UNIT 12

- 3. In the shape at the right, identify:
 - a. A pair of parallel lines.
 - b. A pair of perpendicular lines.
 - c. A pair of intersecting lines.



4. a. Draw \overrightarrow{XY} is parallel to \overrightarrow{AB} .



b. Draw LM is perpendicular to EF.

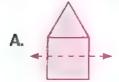




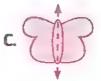
Till lessons (3 & 4) unit 12

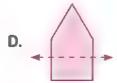
Choose the correct answer.

a. Which of the following figures shows a line of symmetry?





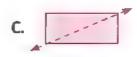


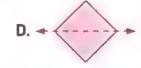


b. All the following figures show a line of symmetry except









c. All the following figures has one line of symmetry except line of symmetry.

has more than one







- d. All perpendicular lines also
 - A. parallel
- B. intersecting
- C. not intersecting
- D. not perpendicular

e. $3\frac{4}{10}$ is equivalent to

A.
$$3\frac{40}{10}$$
 B. $3\frac{4}{100}$

f. $\frac{5}{6} = \frac{1}{6} + \frac{2}{6} + \cdots$

A.
$$\frac{1}{6}$$

B.
$$\frac{2}{6}$$

C.
$$\frac{3}{6}$$

D.
$$\frac{4}{6}$$

2. Complete.

b.
$$3\frac{2}{7}+1\frac{3}{7}=$$

d.
$$2\frac{4}{5} =$$
 (as an improper fraction)

- e. The place value of the digit 5 in the number 3.25 is ——
- f. The word form of 30.03 is



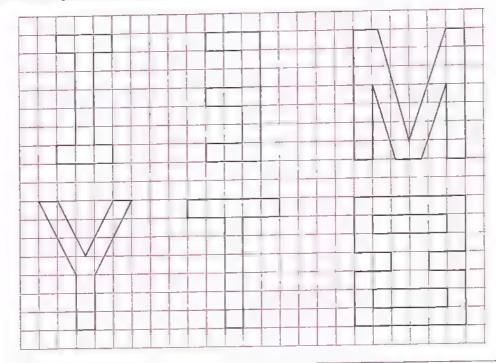


a.
$$5+1\frac{1}{5}+2\frac{2}{5}+2=$$
b. $2-\frac{1}{5}-\frac{1}{5}=$
c. $7\frac{5}{9}-5\frac{4}{9}=$
d. $5\frac{4}{10}+3\frac{1}{10}=$

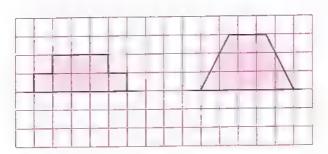
b.
$$2 - \frac{1}{5} - \frac{1}{5} = -----$$

d. 5
$$\frac{4}{10}$$
 + 3 $\frac{1}{10}$ = ----

4. Draw a line of symmetry in each of the following figures.



5. In each picture, you can see half of the shape and the line of symmetry. Draw the rest of each shape.





Tili lessons (5 & 6) unit 12

1. Complete.

- angle is less then a right angle. a. An
- b. An _____ angle is greater than a right angle.
- c. The name of -• is a



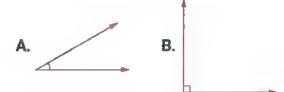
e.
$$\frac{5}{7} = \frac{2}{7} +$$

f.
$$2\frac{1}{7}$$
=

f. $2\frac{1}{7}$ = [as an improper fraction]

2. Choose the correct answer.

a. Which figure shows a right angle?







- b. How many obtuse angles are there in the opposite figure?
 - A. 0
- **B**. 1

- C. 2
- **D**. 3
- c. $5 \times \frac{1}{7} = --$
 - A. 5
- B. 5 7

- c. ¹⁵
- **D.** $1+\frac{5}{7}$

- **d.** 5.17 =hundredths.
 - A. 51.7
- B. 0.517
- C. 517
- D. 5170

- - A. >
- B. <

C. =

- f. $\frac{3}{10} + \frac{1}{100} =$
 - **A.** $1\frac{3}{10}$
- **B.** $3\frac{1}{100}$
- C. $\frac{31}{10}$
- **D.** $\frac{31}{100}$



a.
$$2\frac{1}{5} + 1\frac{2}{5} = -$$

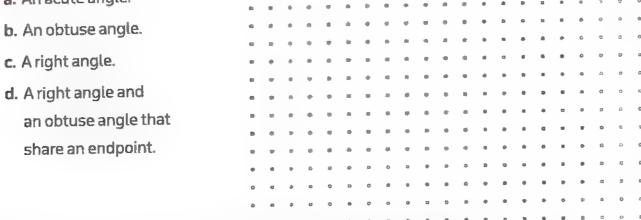
c. 5 ×
$$\frac{1}{9}$$
 = -----

b.
$$7\frac{9}{13} - 5\frac{5}{13} =$$
d. $2 - \frac{4}{5} - \frac{3}{5} =$

d.
$$2 - \frac{4}{5} - \frac{3}{5} = ---$$

4. Use a ruler to connect the dots to draw and label the following in the grid.

a.	Δn	acute	angle.
OI:	CHIL	BCUIC	ungici



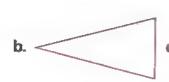
5. Draw a quadrilateral with two acute angles and two obtuse angles.

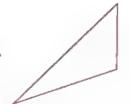
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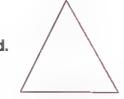
Till lessons (7 & 8) unit 12

1. Classify each triangle by its sides and angles.







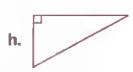


e.



f.





2. Choose the correct answer.

a. All the obtuse triangles has

acute angle(s).

- **A**. 0
- **B**. 1

C. 2

D. 3

- b. The opposite triangle is
- triangle.

- A. an acute
- B. an obtuse
- C. a right
- D. an equilateral



- c. The scalene triangle has ——— equal side(s).
 - A. 0
- **B**. 1

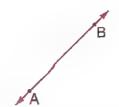
C. 2

- **D**. 3
- d. The palce value of the digit 4 in the number 3.14 is
 - A. Ones
- B. Tens
- C. Tenths
- D. Hundredths

- e. $\frac{30}{100} = \frac{10}{10}$
 - A. 3
- **B.** 30
- **C.** 300
- **D**. 3000

- f. $\frac{34}{5} = -$ {as a mixed number}
 - A. 30 4
- B. $7\frac{1}{5}$
- C. 6 4
- D. 6 2

- g. The opposite figure is named as
 - A. $\overrightarrow{\mathsf{AB}}$
- B. $\overline{\mathsf{AB}}$
- C. AB
- D. \overrightarrow{BA}

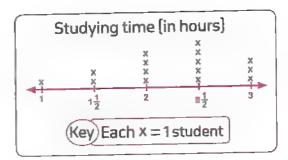


3. Complete.

- a. The ——triangle has three equal sides.
- b. The triangle has no equal sides.
- c. The value of the digit 7 in the number 3.75 is
- d. $7 + \frac{3}{7} = ------$
- f. From the opposite line plot:

The number of students who study

 $2\frac{1}{2}$ hours or more is students.



4. Draw each of the following.

- a. A triangle with an obtuse angle.
- b. An isosceles triangle.
- c. A right angle.



Till lesson (9) unit 12

Choose the correct answer.

- a. The quadrilateral that has equal sides with 4 right angles is a
 - A. rectangle.
- B. square.
- C. trapezium.
- D. rhombus.

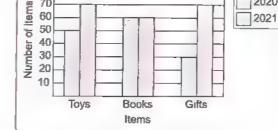
- b. A parallelogram has
 - A. 4 right angles.

- B. 4 equal sides.
- C. 1 pair of parallel sides.
- D. 2 pairs of parallel sides.
- c. A has a vary measuring angles with only one pair of parallel sides.
 - A. parallelogram B. rhombus
- C. trapezium
- D. square

2020

Sold items

- d. The opposite graph shows a
 - A. pictograph.
 - B. line plot.
 - C. bar graph.
 - D. double bar graph.



- **e.** $\frac{7}{100}$ =
 - A. 0.7
- **B.** 0.07
- C. 0.70
- D. 7

- f. Two and two hundredths =
 - A. 2.2
- **B.** 202
- C. 2.02
- **D.** 2.20

- g. The opposite figure is named as
 - A. BA
- B. AB
- C. BA
- D. BA
- h. The equilateral triangle has
- equal side(s).

- A. 0
- **B**. 1

C. 2

D. 3

2. Complete.

- a. The square has -- right angles.
- b. The rhombus has
- egual sides.
- c. 30 + 4 + 0.1 + 0.07 =
- d. $\frac{2}{3} = \frac{15}{15}$
- tenths.
- f. $\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} =$



3. Find the result.

a.
$$3\frac{7}{8} - 2\frac{5}{8}$$

c.
$$2 - \frac{1}{3} - \frac{1}{3}$$

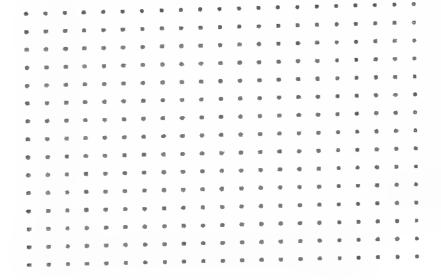
b.
$$2\frac{3}{4} + 3\frac{1}{4}$$

b.
$$2\frac{3}{4} + 3\frac{1}{4}$$

d. $5 + 1\frac{1}{3} + 2 + 2\frac{1}{3}$

4. Use your ruler to connect the dots to draw.

- a. An obtuse angle.
- b. A right triangle.
- c. A trapezoid.



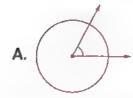
or UNIT 13

Cumulative Assessment

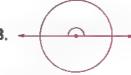
Till lesson 1 unit 13

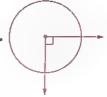
1. Choose the correct answer.

- a. is the same point as 0° after one full rotation.
 - A. 90°
- B. 180°
- C. 270°
- D. 360°
- **b.** Which of the following figures shows a $\frac{1}{4}$ of a full rotation?

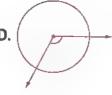












- ____ is an obtuse angle.
 - A. 70°
- B. 125°
- C. 90°

D. 180°

- d. The opposite two lines are ______

 - A. parallel. B. intersecting and not perpendicular.
 - C. perpendicular. D. intersecting.



- **A.** 5.21 **B.** 5.12
- C. 12.5
- D. 1.52
- f. The isosceles triangle has ______equal side[s].
 - A. 0
- B. 1
- C. 2

D. 3

- g. _____ angle is smaller than the right angle.

 - A. A straight B. An obtuse
- C. Aright
- D. An acute

- h. $\frac{5}{7} = \frac{1}{7} + \frac{2}{7} + \cdots$
- **B.** $\frac{2}{7}$

- D. $\frac{4}{7}$
- i. The place value of the digit 6 in the number 2.64 is
 - A. Ones.
- **B**. Tenths.
- C. Hundredths.
- D. Tens.

2. Complete.

- a. 84° is classified as _____ angle.
- b. An obtuse angle measured between _____ o and ____ o



- c. $\frac{1}{6}$ of a circle measured ______°.
- d. $7\frac{1}{3} = -----$ [as an improper fraction]
- e. Two hundred and fourteen hundredths =
- f. $7-3\frac{1}{2} = ---$
- g. $2 \times \frac{1}{5} = ----$
- Classify each angle of the following.













4. Find.

a.
$$3+1\frac{1}{5}+2+3\frac{2}{5}$$

c.
$$2 - \frac{1}{2} - \frac{1}{2}$$

b.
$$3 + \frac{2}{7}$$

d.
$$10\frac{3}{10} - 7\frac{2}{10}$$

- 5. Draw.
 - a. A quadrilateral with 4 right angles and 4 equal sides.
 - b. An acute triangle.
 - c. An obtuse angle.



Till lesson 2 unit 13

Choose the correct answer.

- a. The angle with measured 120° shows a fraction _____
 - A. $\frac{1}{3}$
- **B**. $\frac{2}{3}$

- **D**. $\frac{1}{2}$
- b. The angle which represents the colored part equals
 - A. 30°
- B. 60°
- C. 90°
- D. 120°



- c. The fraction which shows the colored part equals.
 - A. $\frac{1}{4}$
- C. 1
- d. 1=
 - A. $\frac{5}{7}$
- B. $\frac{7}{7}$

- c. $\frac{1}{2}$
- **D.** $\frac{1}{10}$

- e. $\frac{3}{7}$ is equivalent to _____
- C. $\frac{9}{21}$
- **D.** $\frac{9}{28}$

- f. 7 Tenths is equivalent to
 - A. 0.70
- **B.** $\frac{7}{100}$
- C. 0.07
- **D.** $\frac{77}{100}$

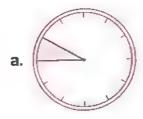
2. Complete.

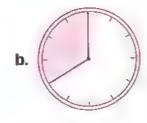
 $a. \frac{80}{100} = \frac{10}{10}$

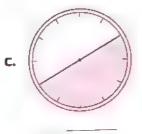
- **b.** $7\frac{7}{9}$ = $5\frac{5}{9}$

- **c.** 10.3 = ---- Tenths.
- d. 3 Ones and 5 Hundredths = -
- **e.** The numerator of the fraction $\frac{3}{7}$ is
- f. 3 + 0.03 + 0.3 =
- g. $\frac{2}{10} + \frac{7}{100} =$
- **h.** $3\frac{2}{5} =$ —— [as an improper fraction]

3. Write the fraction of the clock colored and how many degrees of the clock that fraction represents.







4. Find.

a.
$$2\frac{3}{5} + 1\frac{1}{5}$$

c.
$$3-1\frac{3}{4}$$

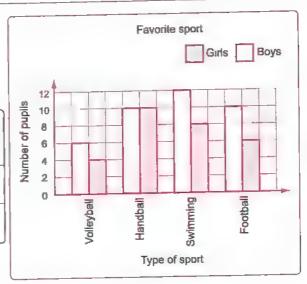
b.
$$9\frac{7}{11} - 5\frac{5}{11}$$

d.
$$2\frac{1}{7}+1+3\frac{2}{7}+4$$

- 5. By using the opposite graph: Answer the following questions.
 - a. Complete the table.

Sport Pupils	Volleyball	Handball	Swimming	Football
Boys	6			
Girls				6





c. How many girls prefer volleyball?



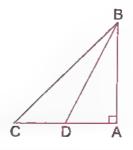
Till lessons (3 & 4) unit 13

1. In the opposite figure, name an acute angle, obtuse angle and right angle.



b. Obtuse angle ______

c. Right angle _____



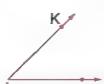
2. Write three different names for each angle.

a.

Name 1: ----

Name 2:

Name 3:



Name 1 : ----

Name 2:

Name 3:



3. Complete.

a.
$$\frac{7}{2} = 1$$

e.
$$\frac{5}{15} = \frac{15}{15}$$

b.
$$\frac{2}{5} \times \frac{3}{3} =$$

b.
$$\frac{2}{5} \times \frac{3}{3} =$$
d. $\frac{23}{5} =$ {as a mixed number}

f. $4\frac{5}{7} + = 6\frac{5}{7}$

f.
$$4\frac{5}{7}$$
 + = 6

- g. There are _____ unit fractions that form seven eighths.
- h. The place value of the digit 5 in the number 3.75 is

i. The name of • → is a



- angle is greater than a right angle and smaller than a straight angle. k, An
- The equilateral triangle has equal sides.

4. Choose the correct answer.

a. Which of the following figures has only one line of symmetry?

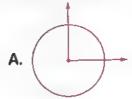








b. Which of the following figures shows a $\frac{1}{2}$ of a full rotation?







D.



c. The model which represents $\frac{5}{6}$ is



- d. In the number 31.45, which digit is in the Tenths place?
 - **A**. 3
- **B**. 1

C. 4

D. 5

e. Which of the following sentences is wrong?

A.
$$\frac{1}{3} > \frac{1}{4}$$

B.
$$\frac{1}{4} > \frac{1}{5}$$

c.
$$\frac{1}{5} > \frac{1}{6}$$

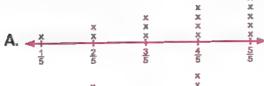
D.
$$\frac{1}{8} > \frac{1}{7}$$

- f. 0.08 = ——— Hundredths.
 - A. 80
- **B**. 0.8
- C. 8

D. 800

g. The line plot which shows the following data

$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
--











Till lessons (5 to 7) unit 13

1. Choose the correct answer.

- a. The opposite figure shows an angle with measure
 - A. 25°
- B. 27°
- C. 153°
- D. 155°



b. Without using protractor, an angle with measure 80° is drawn as



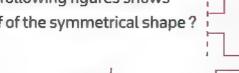








c. Which of the following figures shows the other half of the symmetrical shape?











- d. The opposite figure is named as
 - A. $\overline{\mathsf{AB}}$
- B. BA
- C. AB
- D. BA



- e. The value of the digit 0 in the number 3.05 is
 - **A**. 3
- **B.** 0.05
- **C**. 0

D. 0.3

- f. $5.16 = 5 + 0.06 + \dots$
 - **A.** 5
- **B**. 0.1
- **C.** 0.06
- **D**. 0.5

- g. $6\frac{2}{5}$ = —— (as an improper fraction)
 - A. $\frac{30}{5}$
- **B.** $\frac{62}{5}$
- **c**. $\frac{32}{5}$
- **D.** $6+\frac{2}{5}$

- h. 3.2 = Hundredths.
 - **A.** 3.2
- **B**. 32
- **C**. 320
- **D**. 3.20

2. Complete.

- a. The place value of the digit 5 in the number 3.15 is
- b. The word form of 13.13 is _____



c.
$$\frac{9}{10} = \frac{5}{10} + \cdots$$

- d. An angle is less than a right angle.
- e. The isosceles triangle has _____equal sides.
- f. The _____triangle has three equal sides.
- g. $\frac{4}{5} = \frac{20}{3}$
- h. The rectangle has _____ right angles.
- 3. Use your protractor to draw each of the following angles.
 - a. 70°

b. 53°

c. 130°

- 4. By using your geometric instruments the ruler and the protractor, determine the type of each of the following triangles.
 - a. ★ Type of △ KLM according to its sides _____
 - \star Type of Δ KLM according to its angles
 - b. *Type of △ABC according to its sides ______
 - * Type of ∆ ABC according to its angles _____
 - c. * Type of ∆ XYZ according to its sides _____
 - ⋆ Type of ∆ XYZ according to its angles _____



Monthly Tests

Month	Lessons
March	From lesson 1 unit 9 - to lesson 11 unit 10
April	From lesson 1 unit 11 - to lesson 9 unit 12





March Tests

From lesson 1 unit 9 - to lesson 11 unit 10



1. Choose the correct answer.



Λ			
A.			







A. 0.08

B. 8

C. 80

D. 800

3. Which of the following sentences is wrong?

A.
$$\frac{1}{3} > \frac{1}{4}$$

B.
$$\frac{1}{4} > \frac{1}{5}$$

c.
$$\frac{1}{5} < \frac{1}{6}$$

D.
$$\frac{1}{8} < \frac{1}{7}$$

2. Answer the following:

1. Find:

a.
$$\frac{7}{10} + \frac{2}{10} =$$

2. How many fifths in the number 3?

(1 mark)

(1 mark)

3. Order the following fractions is an ascending order.

(1 mark)

$$\frac{3}{5}$$
, $\frac{3}{10}$, $\frac{3}{4}$, $\frac{3}{9}$, $\frac{3}{7}$

4. Write 18 tenths as a fraction.

(1 mark)

5. A tree of length 46 tenths meters, express the length as a decimal number, and how (1 mark) many hundredths in the number?

6. Salwa bought a pizza and divided it into 10 equal portions, she gave Soha $\frac{3}{10}$ of the pizza and gave Nora $\frac{4}{10}$ of the pizza. What decimal is the remainder? (1 mark)

7. Arrange in an ascending order: 3.4, 4.3, 3.04, 4.03

(1 mark)

Test



Choose the correct answer.

(3 marks)

- 1. The value of the digit 5 in the number 16.35 is
 - A. 0.5
- **B.** 0.05

D. 50

- 2. $5 \times \frac{1}{7} =$
 - A. $\frac{7}{5}$
- **B.** $5 + \frac{1}{7}$
- C. 36
- D. $\frac{5}{7}$

- 3. $\frac{2}{5} + \frac{1}{5}$ $\frac{1}{7} + \frac{2}{7}$
- B. =

C. <

2. Answer the following:

1. Find:

$$2 + \frac{1}{7} + 3 + \frac{2}{7} = -$$

(1 mark)

2. Use the benchmark fractions $0, \frac{1}{2}$, 1 to order the following fractions from least to (1 mark) greatest.

- 1 9 3
- 3. Eslam has 15 apples. Two third of the apple are red.

How many apples are red?

The red apples =

(1 mark)

- 4. Salma bought a piece of cloth of length $\frac{6}{10}$ meter and Mona bought another piece of length $\frac{13}{100}$ meter. What is the total length of the two pieces? (1 mark)
- 5. Ahmed bought $1\frac{1}{2}$ kg of sugar and $3\frac{1}{2}$ kg of flour. How many kg did he buy? (1 mark)
- Write the standard form for: 5 + 0.1 + 0.007? (1 mark)
- 7. Marwan had $2\frac{3}{5}$ cakes. He gave $1\frac{2}{5}$ to his sister. What is the left with him? (1 mark)

April Tests

From lesson 1 unit 11 - to lesson 9 unit 12





(3 marks)

1. Choose the correct answer.

- 1. The opposite figure is named as -
 - A. AB

B. AB

C. AB

D. BA



- 2. All the following letters has one line of symmetry except has more than one line of symmetry.
 - **A.** \(\sum_{\color=1}^{\delta} \)







- 3. Which of the following can be represented by a line plot?
 - A. Our favorite movie.

B. Our favorite animal.

C. Our height.

D. Our favorite food.

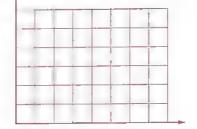
2. Answer the following:

- 1. Draw a line segment XY.
- The following table shows the number of liters Nour drank during some days of the week. Represent these data by a bar graph.

Day	Saturday	Sunday	Monday
Liters	11/2	2	3



(1 mark)



3. From the opposite figure:

identify:

a. A pair of parallel line segments.

C A A D B B

b. A pair of perpendicular line segments.

4. Write the name of the following two lines.

(1 mark)

a,

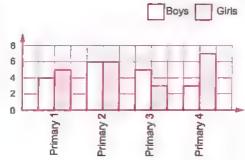


b.

5. Complete the table.

			(1	mark)
		Bo	ys	Girls
1	1	1	-	

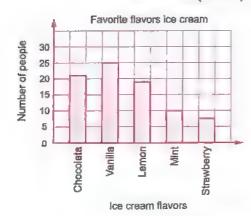
Pupils	Primary 1	Primary 2	Primary 3	Primary 4
Boys		6	5	
Girls	5			7



6. From the opposite bar graph:

(1 mark)

a. What is the number of people prefer the Mint flavor?



b. What is the most preferred ice cream flavors?

7. Draw a right angle.

(1 mark)





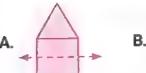


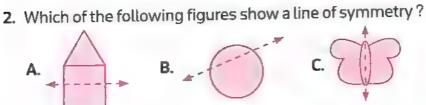
1. Choose the correct answer.

- 1. The two opposite lines are
 - A. intersecting.
 - C. perpendicular.

- B. parallel.
- D. intersecting and not perpendicular.

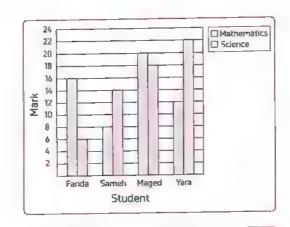








- 3. The graph shows the marks of four students in Mathematics and Science. Which student got the lowest mark in Science?
 - A. Yara.
 - B. Farida.
 - C. Sameh.
 - D. Maged.



2. Answer the following:

1. Draw the straight line \overrightarrow{AB} is perpendicular to \overrightarrow{XY}

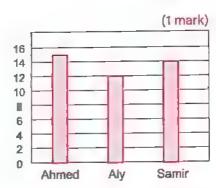
(1 mark)

2. Hala is making a design using a quadrilateral that has 4 equal sides and 4 right angles. (1 mark) What is Hala using? Draw the design.

3. In the graph: No. of pages of a book read by Ahmed , Aly and Samir , answer the following :

a. Who read more than Samir?

b. How many pages were read by all?



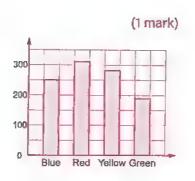
(1 mark)

4. Write the name of the following figures:

5. In the opposite bar line:

Arrange the colors in an ascending order.

The order is: ____< ___<

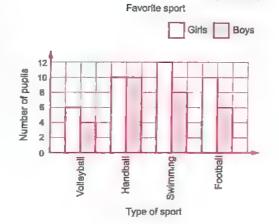


(1 mark)

(1 mark)

6. By using the opposite graph, complete the table:

Sport Pupils	Vollyball	Handball	Swimming	Football
Girls	6		12	
Boys		10		6



7. Represent the following data by the line plot:

 $1\frac{3}{4}$, 1, $1\frac{1}{2}$, $2\frac{1}{4}$, $1\frac{3}{4}$, $1\frac{1}{2}$, 1, $2\frac{1}{2}$, $1\frac{1}{4}$, 2, $2\frac{1}{2}$, $1\frac{1}{2}$





General Revision

On Unit 9

1. Complete.

[El-Beheira 23]

- 2. The denominator of the fraction $\frac{7}{11}$ is
- 3. The colored parts =

[Alex. 23]

4. $\frac{4}{5} = \frac{10}{10}$

[Cairo 23]

 $5.\frac{2}{5} = \frac{10}{10}$

[Giza 23]

6. $\frac{1}{3} = \frac{--}{9}$

(Aswan 23)

 $7.\frac{1}{9} = 1$

[El-Monofia 23]

 $8.\frac{2}{7} + \frac{3}{7} = \frac{-}{7}$

(El-Menia 23)

9. $\frac{1}{7} + \frac{4}{7} =$

(Giza 23)

(Aswan 23)

11. $4\frac{3}{9} + 3\frac{4}{9} =$

[Cairo - Rod El Farag 23]

12.7 $\frac{4}{7}$ -5 $\frac{3}{7}$ =

[El-Menia 23]

13. $1-\frac{2}{5}=$

[Assiut 23]

[El-Monofia 23]

- 15.5 $\frac{1}{4} = \frac{1}{2}$ [as an improper fraction]
- 16. $\frac{17}{3}$ = ——— (as a mixed number)

[Port Said 23]

17.7 $\frac{5}{6}$ - 2 $\frac{1}{6}$ = ----

[Giza 23]

18.5 $\times \frac{1}{7} = -$

2. Choose the correct answer.

1. The unit fraction of the following is ————

[Giza 23]

- **A**. $\frac{2}{5}$
- **B.** $\frac{1}{8}$

- C. $\frac{9}{10}$
- **D.** $\frac{11}{10}$

[Giza 23]

- A. 1
- **B**. 2

C. 5

D. 7





[Kafr El-Sheikh 23]

A. $2\frac{1}{4}$

c. $2\frac{3}{4}$

D. 3

A. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ B. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

c. $\frac{2}{8} + 1$

(Ismailia 23) D. $\frac{1}{8} + 2$

 $5.\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = ---$

[Luxor 23]

C. 1

D. $\frac{3}{5}$

6. The number of sixths in one whole =

[Alex. 23]

A. 1

B. 5

C. 6

D. 4

7. The number of sevenths in one whole = -

[Alex. 23]

A. 8

B. 7

C. 6

D. 5

8. Which of the following is a mixed number?

[Ismailia 23]

C. $3\frac{1}{2}$

D. $\frac{1}{4}$

 $9.\frac{9}{5}$ is a/an_____ fraction.

[El-Beheira 23]

[Giza 23]

(Port Said 23)

[Cairo 23]

[Cairo - Wailli 23]

[El-Menia 23]

A. unit

B. proper

B. improper

C. denominator

improper

10. $\frac{3}{10}$ is a/an _____ fraction.

C. whole

D. proper

A. mixed

11.3 $\frac{1}{2}$ = ——— (as an improper fraction)

D. $\frac{7}{2}$

12. $\frac{8}{5}$ = ----

A. $3\frac{4}{5}$ B. $2\frac{1}{8}$

C. $1\frac{3}{5}$

[El-Monofia 23] **D.** $1\frac{5}{9}$

[Kafr El-Sheikh 23]

13. $\frac{21}{5}$ = ——— [as a mixed number] A. $5\frac{1}{4}$

B. $4\frac{1}{5}$

C. $2\frac{1}{5}$

D. $\frac{5}{21}$

14. $\frac{1}{4}$ $\frac{1}{3}$

A. >

B. <

B. <

 $\mathbf{C}.=$

D. otherwise

C. =

D. otherwise

A. >

B. <

C. =

D. otherwise

17.2 $\frac{1}{8}$ is equivalent to

[El-Monofia 23 , El-Menia 23]

- A. $\frac{4}{8} \frac{2}{8}$ B. $\frac{4}{8} + \frac{2}{8}$
- C. $\frac{17}{8}$
- D. $\frac{11}{8}$

18. $\frac{3}{4} = \frac{-}{20}$

(El-Beheira 23)

- **A**. 5
- **B.** 10

- C. 15
- **D.** 20

19.
$$\frac{7}{8} = \frac{-}{16}$$

[Alex, 23]

- A. 15
- B. 14
- **C**. 2

D. 7

20.
$$3\frac{1}{5} + \frac{4}{5} =$$

(Giza 23)

- **A.** $3\frac{4}{5}$
 - **B.** 5 $\frac{3}{4}$
- **C.** $3\frac{5}{10}$
- D. 4

21.5
$$\frac{2}{7}$$
 + 4 $\frac{3}{7}$ =

[Luxor 23]

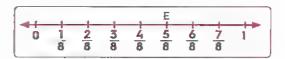
- A. $9\frac{5}{7}$
- **B.** 15
- C. 7 5
- **D.** $5\frac{1}{3}$

22.
$$3\frac{5}{8}$$
 $- 2\frac{1}{8}$ = -----

[El-Monofia 23]

- A. $\frac{4}{9}$
- **B.** $2\frac{4}{8}$
- C. 18
- D. $1\frac{1}{2}$

23. How many unit fraction that represents point E?



- A. 3
- B. 4

C. 5

- D. 6
- [Alex. 23]

- **24.** The fraction $\frac{5}{6}$ is closed to
- (use the benchmark fraction)
- [Cairo 23]

[Cairo 23]

- A. 0
- **B.** $\frac{8}{5}$

- C. $1\frac{1}{2}$
- **D**. 1

- A. $\frac{9}{2}$
- B. $\frac{5}{9}$

C. $\frac{9}{5}$

D. $1\frac{5}{9}$

26. $5 \times \frac{1}{7} =$

(El-Beheira 23)

- A. $5\frac{1}{7}$ B. $\frac{5}{7}$

- c. $\frac{51}{7}$
- **D.** $\frac{36}{7}$

- $27.\frac{7}{12}$ is closer to the benchmark fraction
 - **A.** 1

c. $\frac{1}{4}$

D. 0

3. Answer each of the following.

1. Nabil had $2\frac{4}{5}$ cakes. He gave $1\frac{1}{5}$ to his sister. How many cakes did left with him?

[Alex. 23]

- 2. Zain drank $1\frac{3}{8}$ liters of water, and Hamza drank $1\frac{5}{8}$ liters of water, what did the total liters of water that Zain and Hamza drink? [Giza 23]
- 3. Bader bought $1\frac{1}{2}$ kg of sugar and $2\frac{1}{2}$ kg of flour. How many kg did he buy? (Alex. 23)
- 4. Sara has $6\frac{4}{5}$ cakes, she gaves $3\frac{1}{5}$ to her brother. How many cakes does left with her?

[Luxor 23]

5. How many sevenths in the number 3?

[Cairo 23]

6. Youssef has 18 apples. Two third of the apple are red.

How many apples are red?

The red apples = ----

[Cairo 23]

7. Order the following fractions in an ascending order.

$$\frac{3}{5}$$
, $\frac{3}{10}$, $\frac{3}{4}$, $\frac{3}{9}$, $\frac{3}{7}$

[Aswan 23]

8. Arrange in ascending order: $\frac{5}{10}$, $\frac{1}{6}$, $\frac{8}{9}$

(Cairo 23)

The order is:

General Revision

1. The place value of 7 in the number 3.67 is — ———

On Unit 10

[El-Monofia 23]

1. Complete.

- The place value of the digit 6 in the number 2.65 is [Cairo 23] 3. The value of 5 in the number 7.85 is --[El-Menia 23] **4.** The value of digit 3 in 24.32 is ——— [El-Beheira 23] 5. The value of the digit 6 in the number 2.65 is (Port Said 23) **6.3** $\frac{3}{100} =$ [as a decimal] [Kafr El-Shelkh 23] 7. 0.07 = ——— [as a fraction] [Cairo 23] 8. 6 tens and 8 tenths = [Cairo 23] 9. The standard form of: 8 Ones, 5 Tenths and 7 Hundredths is (Alex. 23) 10. The standard form of: 2 Ones, 1 Tenth, 9 Hundredths = [Port Said 23] 11.2 + 0.1 + 0.03 = [in the standard form] (Cairo 23) +0.212. 3.2 = [El-Monofia 23] **13.** 60.57 = + + (in expanded form) [El-Menia 23]
- 15. 3 + 0.3 + 0.03 = _____ [El-Monofia 23]

+ ----+ (in expanded form)

- **16.** 12.08 is ——[as words form] [Cairo 23]
- 17. 2.4 = Tenths. [El-Menia 23] 18. $\frac{3}{10} + \frac{20}{100} =$ [Cairo 23]
- $20.\frac{4}{10} + \frac{5}{100} =$ (Cairo 23)

2. Choose the correct answer.

- 1. The place value of digit 5 in 12.25 is [El-Beheira 23]
 - A. 0.5 B. 0.05 C. Tenti
 - C. Tenths D. Hundredths
- 2. The digit 4 in the number 13.47 is in
- place.

(El-Monofia 23)

(El-Beheira 23)

A. Once

14.6.17 = -

- B. Tens
- C. Tenth
- D. Hundredth

3. In the number	34.68 , which digit is	s in the Tenths place?		[Cairo 23]
A. 3	B. 4	C . 6	D. 8	
4. The value of th	e digit 5 in the num	ber 3.45 is		[Cairo 23]
A. 5	B. 0.5	C. 0.05	D . 50	
5. $\frac{3}{10}$ [as a decimal	al] =			[Cairo 23]
A. 0.3	B . 10.3	C. 3.01	D. 3.1	
6. $\frac{15}{10}$ =	_	•		[Alex. 23]
A. 1.5	B. 0.15	C . 10.5	D. 1.05	
7. $\frac{25}{10} =$	_			[Alex. 23]
A . 25	B . 2.5	C . 0.25	D. 2.05	
8. The decimal re	presents the colore	ed parts	is _	(Cairo 23)
A. 0.3	B. 0.6	C . 0.7	D , 1	
9. 4.79 =				[Port Said 23]
A. 4 $\frac{79}{100}$		c. $79\frac{4}{100}$	D. 79 $\frac{4}{10}$	[A] "\")
10 . 0.4 is equal to			. 4	[Alex. 23]
A. 0.04	B. $\frac{40}{10}$	C. 0.40	D. $\frac{4}{100}$	
11. 4 + 0.2 + 0.03				(Port Said 23)
A. 4.23	B. 3.24	C. 2.43	D. 4.32	
12 .3 + 0.3 + 0.03	=			(Giza 23)
A . 0.33	B. 3.3	C. 3.33	D. 33.3	
13.4 Ones ,6 Ten	ths,2 Hundredths	=		[El-Menia 23]
A. 6.42	B. 2.46	C. 4.62	D. 2.64	
14.71 Hundredth				[Cairo 23]
A. $\frac{1}{7}$	B. $\frac{17}{10}$	c. $\frac{71}{10}$	D. 0.71	
15. Five Tenths =				(El-Menia 23)
A. 5,000	B. 0.5	C. 0.05	D. 5.05	
16. Three Tenths	=			(El-Beheira 23)
A. 0.03	B. 0.3	C . 0.003	D . $\frac{30}{10}$	
17. 5.5 =	— Tenths.			[El-Monofia 23]
A. 55	B. 0.5	C . 5	D. 0.55	

18. 0.4 0.34

[Alex, 23 , Port Said 23]

A. <

B. =

C. >

D. ≤

19.0.6 0.59 [El-Beheira 23]

A. <

B. >

C' =

D. ≤

20.4.5 4.51

A. <

B. >

C. =

21.2.5 2.58

(Port Said 23)

[El-Monofia 23]

(Kafr El-Sheikh 23)

[Alex. 23]

(Luxor 23)

A. <

B. >

C. =

D. otherwise

22.50.02 20.05

[Alex. 23]

A. >

A. <

B. =

C. <

D. otherwise

23.1.03 (5.7

C. >

D. ≤

24.7 Tenths

(Alex. 23)

A. ≤

B. >

B. =

C. =

D. <

25.0.7 7 Tenths

D. ≤

A. >

B. <

C. =

26. 0.9 < -

A. 0.7

B, 0.15

C. 0.8

D. 1.2

27. Which is correct statement?

A. 8.03 = 8.3 **B.** 5.3 < 5.14

C. 74.8 < 7.48

D. 0.55 > 0.52

28. Which of the following sentences is wrong?

[El-Beheira 23]

(El-Monofia 23)

A. 0.34 < 0.4 **B.** 0.45 > 0.04

C. 0.23 < 0.3

D. 0.54 = 0.45

29. $\frac{9}{10} = \frac{90}{10}$

[Cairo 23]

A. 10

B. 100

C. 9

D. 90

 $30.3\frac{2}{10} = 3\frac{100}{100}$

[Cairo 23]

A. 2.000

B. 200

C. 20

D. 2



31. $\frac{4}{10} + \frac{2}{100} = -$

[Cairo 23]

- **A.** $\frac{6}{100}$
- **B.** $\frac{42}{100}$
- **c**. $\frac{60}{100}$

D. $\frac{6}{10}$

Answer each of the following.

1. Write the standard form for: 4 + 0.7 + 0.009

[Cairo 23]

- 2. A tree of length 37 Tenths meters , express the length as a decimal number , and what is the number in Hundredths? [Cairo 23]
- 3. Hana bought a pizza pie and divided into 10 equal portions, she gave Soha 0.3 of the pizza and gave Nora 0.5 of the pizza. What decimal is the remainder? [Cairo 23]
- 4. Renad had $\frac{7}{10}$ meter of cloth, she went to the shop and bought $\frac{35}{100}$ meter of cloth. How many meters of cloth did she have? (Giza 23)
- 5. Hana bought a piece of cloth of length $\frac{7}{10}$ meter and Mona bought another piece of length $\frac{13}{100}$ meter. What is the total length of the two pieces? [Cairo 23]
- 6. Mina walked $\frac{5}{10}$ kilometer, then he walked another $\frac{35}{100}$ kilometer. How long did Mina walk altogether (fraction and decimal)? [Cairo 23]

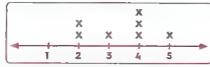
General Revision

On Unit 11

1. Complete.

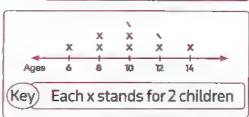
- 1. Representing data by _____ is the suitable to compare between two sets on the same graph. [Cairo 23]
- 2. The most occurred number in the opposite line plot is

[Cairo 23]



3. By using the opposite line plot, the number of children whose ages are 10 years old is

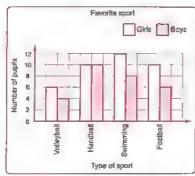
[Aswan 23]



4. By using the opposite graph:

- a. How many boys prefer swimming?
- b. How many girls prefer volleyball?

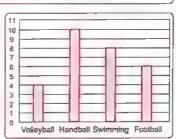
[Kafr El-Sheikh 23 , Cairo 23]



5. Look at the bar chart and answer:

Sport Pupils	Volleyball	Handball	Swimming	Football
Boys	4			

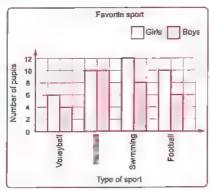
- a. Complete the table.
- b. Which sports has the lowest number of student? [El-Beheira 23]



- 6. By using the opposite graph, answer the following questions:
 - a. Complete the table.

Sport Pupils	Volleyball		Swimming	Football	
Boys	4				
Girls			-	10	

- b. How many boys prefer swimming?
- c. How many girls prefer volleyball?



[Port Said 23]



- 7. The opposite table represent the favorite color of some students:
 - a. What is the most favourite color?
 - b. What is the number of student who liked red and white?

The favourite color				
Color	Number			
Red	12			
Yellow	18			
Black	4			
White	11			
Green	9			

(Ismailia 23)

[Giza 23]

2. Choose the correct answer.

- 1. The opposite graph represents
 - A. a bar graph.
 - B. a double bar graph.
 - C. a line plot.
 - D. a pictograph.
- ____ [Luxor 23] The opposite graph shows a —
 - A. line plot
 - B. bar graph
 - C. pie chart
 - D. double bar graph

Series 1 Series 2 3 2 Category1 Category2 Category3 Category4

Nora

17

Ahmed

13

- 3. Which type of graphs is suitable for the opposite data?
 - Name
 - A. A line plot

we use a

- B. A bar graph C. A double bar graph
- 4. To compare between maximum and minimum temperature,

A. picture representation

B. bar graph

C. line plot graph

D. double bar graph

Age

5. To compare between rainfall in the desert of Africa in the years 2020 and 2022

(Port Said 23)

[El-Beheira 23]

[El-Beheira 23]

Ola

10

Sally

15

- A. picture representation
- B. bar graph

C. line plot graph

- D. double bar graph
- 6. To compare between marks of Hani and Nada, we use a-

[El-Menia 23]

- A. picture representation
- B. bar graph

C. line plot graph

D. double bar graph

7. The vertical and the horizontal rays on the graph are called -

[Alex. 23]

Х

- A. labels
- C. axes

х

14

- B. key
- D. title

Х

X

10

х

X

х

12

8. By using the opposite line plot, the number of children whose ages 10 years old



(Souhag 23)

A. 22

B. 5

C. 3

- **D**. 15
- Data can be represented by

[Alex. 23]

☐ Vegetabje ☐ Fruit

- A. bars
- B. measure angle
- C. triangle drawing

Primary 1

Printary 2

Primary 3

Primary 4

D. otherwise

Favourite fruits and vegetables for the students

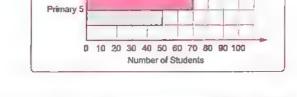
(Key) Each x = 2 children

- 10. From the following graph:
 - a. Which grade has the same number of students who like fruits and vegetable? [Assiut 23]
 - A. Primary 2
- B. Primary 3
- C. Primary 4
- D. Primary 5
- b. What is the total number of the students who like vegetables and fruits in grade 4?
- A. 30
- **B**. 120
- C. 170
- D. 190
- c. Which grade likes vegetables more

than fruits?

[Assiut 23 , Port Said 23]

- A. Primary 1
- B. Primary 2
- C. Primary 3
- D. Primary 4



- 11. To show types of pets that some people have at home, we don't use
- [Cairo 23]

A. a line plot

B. a bar graph

C. a double bar graph

- D. a pictograph
- 12. To put things together have the same property, we use

[Cairo 23]

A. a line plot

B. a bar graph

C. a double bar graph

- D. a Venn diagram
- 13. Which of the following can be represented by a double bar graph?

[Cairo 23]

Favorite animals.

- B. Makrs of friends in Math.
- C. Makrs of friends in Math and Arabic.
- D. Our heights.
- 14. The following table can be represented by-

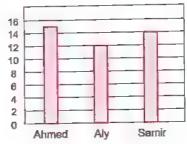
(Cairo 23)

- A. a line plot
- B. a bar graph
- C. a double bar graph

Subject	Arabic	English	Math	Science
Bassem	30	35	39	33
Mone	25	40	37	38

General Revision

15. A double bar graph is used to display — of data on a graph. D. 4 groups C. 3 groups B. 2 groups A. 1 group **16. a.** In the opposite line plot of jumping students: What is the number of students who jumped $\frac{3}{5}$ Jumping distance in meters [Cairo 23] and more? B. 3 X = 1 student A. 1 b. In the previous example, the number D. 9 C. 6 which is most repeated is **c**. $\frac{3}{5}$ D. $\frac{4}{5}$ Answer each of the following. 16 1. In the graph: No. of pages of a book read by Ahmed 12 , Aly and Samir , answer the following : 10 8 a. Who read more than Samir? 6



[Cairo 23]

d. Find the difference between Ahmed and Aly.

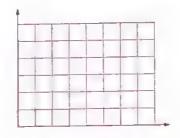
c. How many pages were read by all?

b. Who read the least pages?

2. The following table shows number of liters Nour drank during

some days of the week. Represent data by a bar graph. [Alex 23]

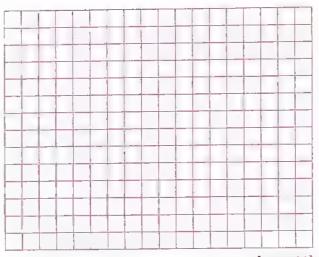
Days	Saturday	Sunday	Monday
Liters	1 1 2	2	3



[Cairo 23]

3. Represent the following data by bars:

Student	Distance in meters
Tahani	34
Salah	2 1/4
Ziad	1/2
Waleed	1 1 2



[Cairo 23]

4. Use the following data to make a line plot.

5 1/2	3 1/2	6 1 2	4 1/2	5 1/2	4 1/2	6 1/2	5 1/2	4 1/2	5 1/2
4	3	5	$5\frac{1}{2}$	3 1/2	4	6	6	4	5

5. Giovanni made a table to show the marks for two teams, the goldenrods, and the opponents team in the first three exams. What type of graph would be most appropriate for Giovanni to use to display these data? Explain.

Marks Scored in Each Exam						
Team	Exam 1	Exam 2	Exam 3			
Goldenrods	30 1 2	31 1 4	31 1 2			
Opponents	32 1 4	30 1/2	31 1 4			

Represent these data by this type of graph, then answer the following questions.

- a. Which team has got the highest score in Exam 3?
- b. Which team has got the lowest score in Exam 1?
- c. What is the difference between the highest and lowest score in Exam 2?
- d. What is the sum of the highest and lowest score in Exam 3?

General Revision

On Unit 12

L.	Complete.	(
	1. The opposite figure is named as X Y	[Port Said 23]
	2. The name of ——— is ———	[Alex. 23]
	3. The two lines are	(El-Menia 23)
	4. The following two lines are lines.	[Luxor 23]
	5. The two lines which never intersect must be	[Cairo 23]
	6. Number of points of intersection of two parallel lines = ———	(Cairo 23)
	7. The opposite figure represents ——— angle.	[Luxor 23]
	8. The opposite figure shows ———— angle. B A	[Alex. 23]
	9. The opposite angle is ———— angle.	[Port Said 23]
	10. The measure of angle is less than the measure of a right angle	. (Giza 23)
	11. The triangle with equal sides is called triangle.	[El-Menia 23]
	12. Any triangle has at least ———— acute angles.	[Cairo 23]
		3 , El-Beheira 23]
	14. A triangle whose side lengths are 8 cm -8 cm and cm is an equ	
	triangle.	(Cairo 23)
	15. The opposite figure is ——— triangle according to its angles.	[Cairo 23]
	16. All of the following /, , are quadrilateral except	
		(Assiut 23)
	17. The square has ————right angles.	(El-Monofia 23)
	18. The number of the right angles in the figure =	(Giza 23)
	19. The rectangle has — right angles.	[Luxor 23]
	20.——has only one pair of parallel sides.	(Et-Menia 23)

2. Choose the correct answer.

1. The opposite figure called a -

(El-Monofia 23)

- A. straight line
- B. line segment
- C. ray
- D. point

2. The opposite figure named as

[Kafr El-Sheikh 23]

- $A. \overline{AC}$
- B. AC
- C. AC
- D. CA

- 3. The name of the opposite figure is
 - $A. \overline{AB}$
- $\mathbf{B}. \ \overrightarrow{\mathbf{AB}}$
- C. AB
- \mathbf{D} , $\overrightarrow{\mathbf{B}}\overrightarrow{\mathbf{A}}$



[El-Menia 23]

- 4. The two opposite lines are
 - A. intersecting.

B. parallel.

C. perpendicular.

- D. intersecting and not perpendicular.
- 5. Which lines show two perpendicular lines?











6. Which lines show two parallel lines?









[Cairo 23]

- 7. The opposite figure represents

A. intersecting

B. perpendicular

C. parallel

D. otherwise

[Cairo 23]

8. Which of the following figures show a line of symmetry?



(Cairo 23)

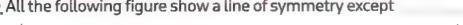








9. All the following figure show a line of symmetry except











10 angle is	s less than right an	gle in measure.		(Giza 23)
A. An acute	B. An obtuse	C. A straight	D. A right	4
11. The opposite figure	e shows ————	angle.		
A. an acute		B. a right	4	
C. an obtuse		D. a straight	[K	afr El-Sheikh 23)
12. Which figure show	vs an acute angle?			[Cairo 23]
†	_	1		
				•
Α.	B.	C.	D.	
13. The measure of ar	n acute angle ——	the measure of a	right angle.	(Cairo 23)
A. greater than		C. equal	D. a and c	
14. The opposite triar		riangle.		
A. an acute		B. a right	\	
C. an obtuse		D. a straight		
				(Cairo 23)
15. The ——— tri	angle has three dif	ferent side lengths.		(Port Said 23)
A. equilateral	B. scalene	C. isosceles	D. right	
16. Any triangle has	acute an	gles at least.		[Alex.23]
A. 1	B. 2	C . 3	D. 4	
17. The opposite triar	ngle is ———— tı	riangle.		
A. an acute		B. an obtuse		
C. a right		D. a straight		[El-Monofia 23]
18. The type of the o	pposite triangle is	angled triang	gle.	
A. a right		B. an acute		
C. a scalene		D. an obtuse		[Alex. 23]
19. The triangle which	n all sides are equal	in length is called a/an	tria	ngle. [Alex. 23]
A. isosceles	B. equilateral	C. scalene	D. right	
		cm , 4 cm and 4 cm) is ca		— triangle.
∠u. mangte whose s	nue terrguis are (4 t		ar a 6 for the	[El-Beheira 23]
A. an equilateral	B. an isosceles	C. a scalene	D. a right	•

21. The right-angle i	triangle has	right angle(s).		(Luxor 23
A. 5	B. 4	C. 9	D. 1	
22. All angles in the	equilateral triangle	e are		(Giza 23
A. right	B. acute	C. obtuse	D. straight	
23. The polygon whi	ich has 5 sides in ca	illed ———		[Cairo 23]
A. a quadrilateral	B. a pentagon	C. a hexagon	D. an octago	n
24. The quadrilateral	l which has four righ	nt angles and four equa	ıl sides is ———	[Giza 23]
A. a rhombus	B. a square	C. a rectangle	D. a triangle	
25. The square has	right ang	ite[s].	(1	El-Beheira 23)
A. 1	B . 2	C. 3	D. 4	
26. The is	a parallelogram wi	ith 4 right angles.	(E	El-Monofia 23)
A. rectangle	B. rhombus	C. square	D. trapezium	
27. The parallelogran	n which has 4 equa	l sides is a ———		[Alex. 23]
A. trapezium	B. rectangle	C. triangle	D. rhombus	
	quadrilateral with o B . rectangle	ne pair of parallel side C. square		ren't equal. (I-Monofia 23)
29. The rhombus has	_			El-Sheikh 23)
A. 1	B. 2	C. 3	D. 4	EL-SHEIKH ZSJ
Answer each of the f	following.			
1. Draw the straight li	ne \overrightarrow{AB} is perpendic	ular to XY	×	Ý
				(Cairo 23)
2. Draw a line segme	nt XY.			[Cairo 23]
3. Hala is making a de What is Hala using		ilateral that has 4 equ	al sides and 4 righ	nt angles.
4. From the opposite	figure ;		C	A
Identify:			<u></u>	7
a. A pair of paralle	l line segments.		D D	→ В
b. A pair of perpen	dicular line segmer	nts.		

3.

General Revision

On Unit 13

1. Complete.

1. The measure of the central angle which represents $\frac{1}{4}$ of the circle is

(El-Monofia 23)

2. The measure of the straight angle is _____o

[Alex. 23]

3. The angle with measures equal 120° is ———— angle.

[Alex, 23]

4. The measure of the right angle = —

[Port Said 23]

5. $\frac{1}{4}$ of the opposite circle measured ______^0

(Alex. 23)

6. An angle with measures 65° is a/an ———— angle.

[Cairo 23]

7. In the triangle NCF, NC = $6 \, \text{cm}$, CF = $8 \, \text{cm}$ and NF = $10 \, \text{cm}$, then it is a/an ———— triangle.

[Cairo 23]

8. The $\frac{5}{12}$ of the circle represents with —

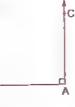
[Cairo 23]

9. We use ———— to measure angle.

[Cairo 23]

10. The two sides of the opposite angle

are — and



11. An obtuse angle measures between -

12. The opposite angle named as

____ and ___

13. An acute angle measures between 90° and ———

14. The $\frac{6}{12}$ of the circle represents with ———— angle.

Choose the correct answer.

1. is an acute angle.

[Cairo 23]

(Ismailia 23)

(El-Menia 23)

- A. 70°
- B. 105°
- C. 90°
- D. 179°

D. straight

- 2. The angle of measure 75° is a/an
- angle. C. obtuse

- A. acute
- B. right
- [El-Monofia 23]

- A. an acute
- B. an obtuse
- C. a right
- D. a straight

4. The measure of the right angle = -

3.35° is ———angle.

- A. 90
- **B**. 30
- C. 200
- D. 180

_				
	measures between	90° and 180°		(Cairo 23)
A. An acute	B. An obtuse	C. A right	D. A straight	
6. The angle of mea	sure 90° is called —	angle.		(Giza 23)
	B. an obtuse	C. an acute	D. a straight	
7. ——— angle	measures 180°		(El	-Beheira 23]
A. An acute	B. A right	C. An obtuse	D. A straight	
8. The measure of t	he straight angle =	—— degrees.	(EL	-Beheira 23]
A . 30	B. 60	C. 90	D. 180	
9. The - is	formed by two rays th	at have the same endp	oint.	[Cairo 23]
A. point	B. side	C. angle	D. vertex	
10. The name of the	opposite angle is —			(Cairo 23)
A. ∠CAB				c/
B . ∠ CBA				
C . ∠ BAC			<u>A</u> B	<u> </u>
D . ∠ ACB			Ь	Α
11. Which angle is na	med as angle DEF?			(Cairo 23)
E	E	En	D,-	, ,
A. D<	B. E	C . D<	0 -	
A. 5	D. E		D. F	
F	D	E	E	
12. The related fracti	on to the angle of me	easure 180° is ———	— of the circle.	[Alex. 23]
A. $\frac{1}{6}$	B. $\frac{1}{4}$	c. 1/3	D. $\frac{1}{2}$	
13. The angle with m	easures 50° is	_	_	(Giza 23)
A. a right	B. an acute	C. an obtuse	D. a straight	
9	angle is greater than 9	70° and smaller than 1	80° (Kafr El-	-Sheikh 23]
A. acute	B. right	C. obtuse	D. straight	
15. The triangle who	se measure of one of	its angle is 120° is call	eď	
a/an tr	riangle.			[Cairo 23]
A. acute-angled	B. right-angled	C. obtuse-angled	D. equilateral-a	ngled
<mark>l6.</mark> The angle with m	easures 170° is a/an			(Cairo 23)
A. acute	B. right	C. obtuse	D. straight	
7. The angle with m	easures 80° is	— angle.	[El-I	Beheira 23)
A. an obtuse	B. a right	C. an acute	D. a straight	



	18. The triangle of sid	e lengths 9 cm ,7 cr	m and 9 cm is ——		[Cairo 23]
	A. an equilateral		C. an isosceles	D. otherwise	
	19 In triangle XYZ sm	[∠X] = 40° ₃m [∠Y	$[] = 40^{\circ} \text{ and m } [\angle Z] =$	100° , then it is cal	led
	triangle.				[Cairo 23]
	A. an acute	B. a right	C. an obtuse	D. a scalene	
	20. The triangle who	se side lengths are (6 cm 36 cm and 6 cm is	called	[Cairo 23]
	A. a scalene		B. an isoscles		
	C. an equilateral		D. information not	t enough to decide	
	21. Number of degree	es of the circle is			[Cairo 23]
	A. 180°	B . 270°	C. 360°	D. 450°	
	22 The triangle of sig	de lenaths 4 cm , 6 c	m and 6 cm is called		[Cairo 23]
	A. an equilateral		C. a scalene	D. otherwise	
3.	1. By using the protra then determine it	actor, draw the angl	e with measure 60°		[Cairo 23]
	2. Draw an angle of r			(Cairo	23 • Giza 23]
	3. Draw an angle of r	neasure 110°			[Cairo 23]
	4. Use your protracto	or to draw ∠ ABC of	measure 70°		(Cairo 23)

5. Draw the following angles: 90°

6. Draw ∠ ABC with measure of 30° and classify by its type.

The opposite angle is _____ angle. _____

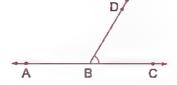
[Cairo 23]

7. Complete:

a. ∠ is an acute angle.

b. \angle is an obtuse angle.

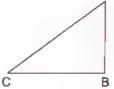
(Cairo 23)



8. By using your geometric instruments [The ruler and protractor]: Determine the type of each of the following triangles.



- a. Type of △ ABC according to its sides
 - Type of △ ABC according to its angles ————



- b. Type of \triangle XYZ according to its sides
 - Type of ∆ XYZ according to its angles



9. Measure each of the following angles, then classify each angle by its type.

a.





C.





According to the updated specifications of the exam paper





1. Choose the correct answer.

1. Any triangle has	acute angles at least
,,	

D. 4

- 2.2 $\frac{1}{8}$ =

- D. 5
- 3. The angle of measure 150° is called a/an angle.
 - A. acute
- B. right
- C. obtuse
- D. straight

- $4.\frac{2}{3} \times 1 = -$

- 5. Five and three Tenths =
 - A. 3.2
- **B**. 5.3
- **C.** 10
- D. 4

- 6. This opposite figure is read as
- B. AB
- C. AB
- D. AB

- 7. Which type of graphs is suitable for this data?
 - A. line plot.
- B. double bar.
- C. bar graph.
- D. pictograph.
- Name Sara Ali Ola Age 12 15 17
- 8. To comparea between maximum and minimum temperatures in a city during one week , we use a -
 - A. pictograph

B. bar graph

C. line plot graph

D. double bar graph

- 9. $\frac{1}{2}$ of a circle is measured
 - A. 60°
- C. 180°
- D. 360°

2. Answer the following.

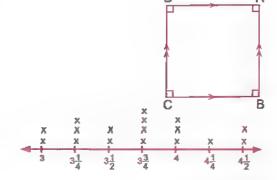
1. Salma has $\frac{5}{10}$ pound. Hoda has $\frac{35}{100}$ pound.

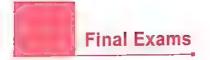
What is the total amount of money they have?

- 2. In the opposite figure:
 - a. AB // _____
 - b. BC ⊥.---



What is the most common record?





- 4.2.46 = + 0.06 [in expanded form]
- 5. Ahmed drinks 0.6 liter of juice and Heba drinks $\frac{4}{10}$ liter of juice. Who does drink more?
- 6. Find the result of $2\frac{2}{9} + 3\frac{5}{9} = -$
- 7. Use your protractor to measure the opposite angle.



Exam 2

1. Choose the correct answer.

- 1. The type of triangle whose side lengths are 10 cm, 8 cm, and 6 cm is ———— triangle.
 - A. an isosceles
- B. an obtuse
- C. an acute
- D. a scalene
- 2. The fraction $\frac{5}{6}$ is closer to [use the benchmark fraction]
 - A. 0

B. $\frac{8}{5}$

- C. $1\frac{1}{2}$
- D. 1

- 3. The opposite figure represents lines.
 - A. intersecting

B. perpendicular

C. parallel

D. otherwise



- A. an obtuse
- B. a right
- C. an acute
- D. a straight

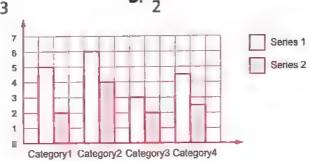
5. If
$$\frac{12}{x} = \frac{2}{3}$$
, then $x = -\frac{1}{3}$

- **A.** 20
- **B**. 14
- **C**. 18
- **D.** 13
- 6. Which of the following can be represented by a double bar graph?
 - A. Favorite animals.

- B. Marks of some friends in Math.
- C. Marks of some friends in Math and Arabic.
- D. Our heights.
- 7. The place value of digit 5 in 12.25 is
 - **A.** 0.5
- **B.** 0.05
- C. tenths.
- D. hundredths
- 8. The related fraction to the angle of measure 180° is _____ of the circle.
 - A. $\frac{1}{6}$
- **B.** $\frac{1}{4}$
- C. $\frac{1}{3}$

D. $\frac{1}{2}$

- 9. The opposite graph shows a
- A. line plot
 - B. bar graph
 - C. Pictograph
 - D. double bar graph



2. Answer the following.

- 1. Omar has 20 cakes. If $\frac{1}{5}$ of them are covered with chocolate. How many chocolate cakes are there?
- 2. Arrange the following decimals in a descending order: 0.08, 0.03, 0.9, 0.5

The order is:

- 3. Draw the angle ABC of measure 70° and write its type.
- 4. Complete the table:

Pupils	Primary 1	Primary 2	Primary 3	Primary 4
Boys		30	25	
Girls	25			35



5. Find:

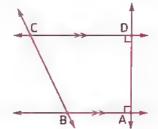
$$a.5 \times \frac{1}{5}$$

b.
$$6\frac{1}{5} + 3\frac{2}{5}$$

- 6. How many sevenths in the number 3?
- 7. In the opposite shape, identify:



2. a pair of perpendicular lines. ----





1. Choose the correct answer.

1. 6 4

A. >

B. <

C. =

D. otherwise.

2. The name of ——is ——

A. a line

B. a ray

C. an angle

D. a straight

3.2 ones and 3 tenths = ----

A. 3.2

B. 0.23

C. 0.32

- **D**. 2.3
- 4. The quadrilateral which has four right angles and four equal sides is _____
 - A. a rhombus.
- B. a square.
- C. a rectangle.
- D. a triangle.

5.7 × 1/4 = ---

A. $\frac{1}{28}$

- B. 7 1/4
- C. $\frac{7}{4}$
- **D**. $\frac{7}{28}$



6. The opposite two lines are ----



- A. parallel.
- B. intersecting. C. perpendicular.
- D. otherwise.
- 7. A double bar graph is used to display _____ of data on a graph.

- A. 1 group
- B. 2 groups
- C. 3 groups
- D. 4 groups
- 8. In the opposite line plot, the greatest frequency



A. $\frac{2}{3}$

B. 1



C. $1\frac{1}{3}$

- **D.** $1\frac{2}{3}$
- 9. The angle which represents the colored part =





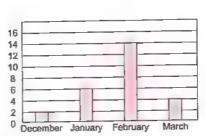
Answer the following questions.

- 2. The opposite figure shows an angle of measure -
- 3. Sara has $\frac{5}{10}$ liter of juice. She adds $\frac{45}{100}$ liter of juice.



4. Complete the table:

Month	December	January	February	March
No. of days		_	_	

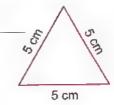


5. Arrange the following fractions from the least to the greatest.

$$\frac{7}{9}$$
, $\frac{4}{9}$, 1, $\frac{1}{9}$, $\frac{5}{9}$

6. Circle all the decimal numbers that are greater than 3.2

- 7. a. The type of the opposite triangle according to its side lengths is
 - b. The perimeter of the triangle = ——— cm.



Exam 4

1. Choose the correct answer.

- 1.70 + 5 + 0.6 + 0.03 = [in standard form]
 - A. 75.36
- **B.** 75.63
- C. 7.563
- **D.** 705.36

- 2.5 $\frac{4}{10}$ is equivalent to
 - **A.** 540
- **B**. 54
- **C.** 0.54
- D. 5.4

- 3. The angle which represents the colored part is
 - A. 30°

B. 60°

C. 90°

- D. 120°
- 4.2 $\frac{3}{5}$ = (as an improper fraction).
 - **A.** $\frac{10}{5}$
- B. $\frac{30}{5}$
- **c**. $\frac{13}{5}$
- **D.** $\frac{5}{13}$

- 5. The two lines _____ are
 - A. intersecting.
- B. perpendicular.
 - C. parallel.
- D. otherwise.
- **6.** The opposite triangle is a/an ———— triangle.
 - A. right

B. acute

C. obtuse

D. equilateral



Ole

10

- 7. The angle is _____angle.
 - A. an acute
- B. a right
- C. an obtuse

Name

Age

Ahmed

13

D. a straight

Sally

15

- 8. Which type of graphs is suitable for the opposite data?
 - A. A line plot.
 - **B.** A bar graph.
 - C. A double bar graph.
 - D. Pictograph.
- 9. The vertical and the horizontal rays on the graph are called _____
 - A. labels
- B. key
- C. axes
- D. title

Nora

17

2. Answer the following questions.

- 1. Arrange the following fractions in an ascending order: $\frac{3}{8}$, $\frac{1}{8}$, $\frac{5}{8}$, $\frac{7}{8}$, $\frac{4}{8}$
- **2.** Ziad walked $\frac{7}{10}$ km, then he walked another $\frac{21}{100}$ km.

What is the total distance did Ziad walk?

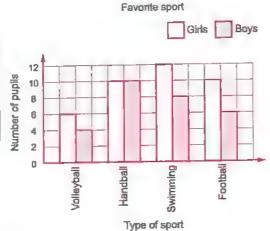
. Use the opposite an	le to answer	the questions:
-----------------------	--------------	----------------

- a. Its name is \angle -
- b. Its type is: ----
- c. Its vertex is: -
- d. lts measure = -



4. Use the opposite graph, complete the table:

Sport Pupils	Volleyball	Handball	Swimming	Football
Girls	6	· —	12	
Boys	_	10		6



5. Find:

a.
$$3\frac{5}{6} - 2\frac{1}{6} =$$
 b. $2 \times \frac{3}{25} =$

b.
$$2 \times \frac{3}{25} = ------$$

- 6. Hany had 9 cookies. He ate $\frac{2}{3}$ of them. How many cookies did he eat?
- 7. Draw LM is perpendicular to AB



Exam

1. Choose the correct answer.

1. The type of the triangle whose side lengths are 5 cm., 8 cm., and 8 cm.

is — triangle.

- A. an isosceles
- B. a scalene
- C. an equilateral D. an obtuse

- $2.\frac{8}{3} =$ (as a mixed number).
 - A. $3\frac{2}{3}$

- C. $\frac{3}{8}$
- D. $2\frac{2}{3}$
- is an obtuse angle. 3. The angle of measure
 - A. 40°

B. 90°

- C. 120°
- D. 65°

- 4. The name of is
 - A. a ray.

B. a line segment.

C. a straight angle.

A. perpendicular

- D. a right angle.
- 5. The 2 lines _____ are
 - B. intersecting
 - C. parallel

D. intersecting and not perpendicular

- 6. $\frac{2}{5} = \frac{x}{10}$, then x =
 - A. 4

B. 1

- **C**. 2
- **D**. 5

- 7. By using the opposite line plot, the number of children whose ages 10 years is
 - A. 22

B. 5

C. 3

D. 15

- Х 10 16 (Key) Each x = 2 children
- 8. What fraction of a circle a 1º angle would represent?
 - **A.** $\frac{1}{360}$

B. $\frac{60}{360}$

- $c. \frac{300}{360}$
- **D.** $\frac{360}{360}$
- 9. To comapre between marks of Hani and Nada in Math, Arabic and English exams, we use

 - A. pictograph

B. bar graph

C. line plot

D. double bar graph

- 2. Answer the following.
 - 1. From the opposite line plot.

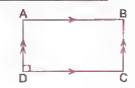
How many persons ran $\frac{3}{5}$ km?



2. Find the result of: $3\frac{2}{9} + 2\frac{1}{9} =$

(Key) Each x = 1 person

- 3. From the opposite figure:
 - a. AB and are parallel.
 - b. AD and are perpendicular.

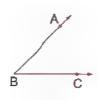


4. Arrange the following fractions from the least to the greatest: $\frac{5}{10}$, $\frac{2}{10}$, $\frac{4}{10}$, $\frac{1}{10}$

- 5. Maha drank $\frac{4}{10}$ liter of juice. Her sister drank $\frac{30}{100}$ liter of the same juice. How much juice did they drink together?
- **6.** Vera has 9 pounds, she gave her brother $\frac{1}{3}$ of the money.

How much did she give to her brother?

- 7. In the opposite figure:
 - a. The name of the angle: -
 - **b.** The type:



Exam 6

1. Choose the correct answer.

- 1. The number of unit fractions in four sevenths is _____
 - A. 7

B. 6

- C. 5
- D. 4

- **2**.3 $\frac{4}{100}$ = ----
 - A. 3.04

B. 3.4

- C. 0.34
- **D.** 40.3

- 3.3.4 _____ 3.27
 - A. <

B. >

- C. =
- D. <
- 4. The acute angled triangle contains ———— acute angles.
 - A. 3
- **B**. 2

C. 1

D. 0

- 5. The opposite figure is named as -
 - A. $\overrightarrow{\mathsf{AB}}$
- B. BA
- C. AB
- D. AB
- В

- 6. The colored part in the opposite figure represents an angle of measure ______o
 - A. 90
- **B.** 180
- C. 270
- D. 360

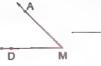
- 7. Which type of graph is suitable for this data?
 - A. double bar graph.

B. line plot

C. bar graph

- D. pictograph
- Name Ali Ola Nora Age 13 17 15

8. The vertex of the opposite angle is



- ΔΔ
- B. D

C. M

D. AM

9. In the opposite figure :

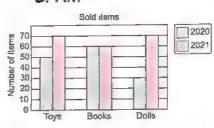
Which item is sold the least in 2020?

A. Toys

B. Books

C. Dolls

D. 70



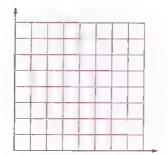
2. Answer the following.

- 1. Salma drinks $1\frac{3}{8}$ liters of apple juice and Donia drinks $2\frac{5}{8}$ liters of the same juice. Calculate the total number of liters which they drink.
- 2. Ayman has $4\frac{1}{4}$ bars of chocolate, he gives Youssef $2\frac{3}{4}$ bars of it. Calculate the remaining with Ayman.

3. Draw an angle of measures 70°

4. The following table shows the number of studying hours of Mathematics within a week. Represent these data using bar graph:

Name	Ali	Yasser	Samaa	Dalia
No. of hours	8	6	4	2



5. Find :

a.
$$2 - \frac{1}{5} =$$

b.
$$\frac{35}{100} + \frac{3}{10} = \frac{35}{100} =$$

6. Arrange in a descending order.

$$\frac{1}{7}$$
, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{2}$, $\frac{1}{10}$

7. Write the name of each two lines.



a.



b. _____

Exam

1. Choose the correct answer.

- A. 5.23
- **B**. 5.32
- **C**. 50.32
- **D.** 15.23

$$2.\frac{5}{10}$$
 $\frac{50}{100}$

- A. >
- B. <

C. =

D. otherwise

$$3.\frac{2}{100} =$$
—hundredths

- A. 0.2
- B. 2

- C. 20
- **D.** 200

4. — angle its measure is more than 90° and less then 180°

- A. A right
- B. An acute
- C. Astraight
- D. An obtuse

5. The rhombus has — equal sides.

- A. 1
- **B**. 2

C. 3

D. 4

- 6. From the opposite figure, the two straight lines are
 - A. perpendicular.

B. parallel.

C. intersecting.

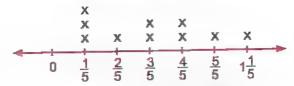
- D. not intersecting.
- 7. A double bar graph is used to display ———— groups of data on a graph.
 - A. 1
- B. 2

C. 3

- D. 4
- 8. To compare between rainfall in the desert of Africa in the years 2020 and 2022
 - , we use a -----
 - A. picture representation
 - C. line plot
- C. tire proc
- 9. In the opposite line plot:
 What is the number of students who jumped 3/5 m and more?
 - A. 1
 - C. 6

- B. bar graph
- D. double bar graph

Jumping distance in meters



- **B**. 3
- D. 9
- (Key)
- Each x = 1 student

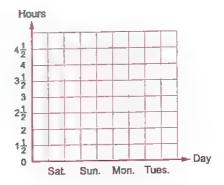
2. Answer the following.

b.3
$$\frac{2}{5}$$
+1 $\frac{3}{5}$ =

2. The following data shows the number of hours that. Ahmed study in four days Represent this data by using a bar graph.

Day	Sat.	5un.	Mon.	Tues.
Number of hours	3	41	2 1	4

3. By using the protractor draw an angle of measure 60°



- 4. Arrange in an ascending order: $\frac{1}{10}$, $\frac{5}{10}$, $\frac{10}{10}$, $\frac{7}{10}$, $\frac{2}{10}$ The order is:
- 5. Gamal's home is 0.44 km. from the school, while Hany's home is $\frac{6}{10}$ km from the school. Who has to walk a longer distance to the school?
- 6. There are 12 birds on a tree $\frac{3}{4}$ of them flew away. How many birds flew away?
- 7. Build a triangle with a right angle.

Exam 8

1. Choose the correct answer.

$$1.6 + \frac{2}{7} + 3 + \frac{2}{7} = -$$

- A. $8\frac{5}{7}$
- **B.** $3\frac{5}{7}$
- **c**. $\frac{13}{7}$
- **D.** $9\frac{4}{7}$

- 2. The name of X Y is ____
 - A. XY
- B. \overline{YX}
- C. XY
- D. \overrightarrow{YX}

- 3. Two lines never intersect are
 - A. perpendicular. B. parallel
- C. intersecting
- D. otherwise

- **4.** 0.45 <u>45</u> 100
 - A. >
- B. <

C. =

D. otherwise

- **5.** The tenths digit in 25.34 is _____
 - A. 4
- B. 9

C. 3

D. 5

- 6. We use double bars to show
 - A. one group B. two groups
- of data.
 - C. 3 groups
- D. 4 groups

- 7. The measure of the right angle _____90°
 - A. >
- B. <

C. =

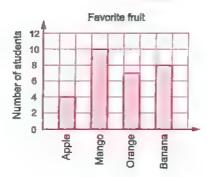
D. otherelse

- 8. The angle which represents the oppsite colored part equals
 - A. 90°

B. 30°

C. 120°

- **D**. 150°
- 9. The number of students who like mango is
 - A. 8
 - **B.** 10
 - C. 4
 - D. 7

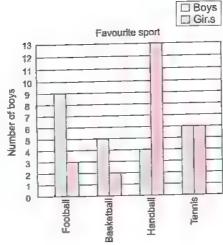


2. Answer with sters.

- 1. Draw ∠ ABC of measure 60°

4. Mohamed made statistics (favorite sport) in double bars complete table.

	F	avorite sport		
Sport	Football	Basketball	Handball	Tennis
Boys				
Girls				



5. Find the result:

a.
$$4 + \frac{4}{8} + 2 + \frac{5}{8} =$$
 b. $2 \frac{4}{6} - \frac{5}{6} =$

b.
$$2\frac{4}{6} - \frac{5}{6} = -----$$

6. Emy had $5\frac{2}{3}$ cakes, she gave $3\frac{1}{3}$ to her sister. How many is left with her?

7. Write the name of each of the following figures:

_	100



1. Choose the correct answer.

1. The number of the unit fractions in the fraction $\frac{3}{8}$ is

17 hundredths. 2.17 tenths -

3. The triangle with side lengths 5 cm $_{2}$ 5 cm and 5 cm is called

triangle.

4. Which of the following can be represent by a line plot?

A. our favorite movies

B. our heights

C. our favorite animals

D. our favorite food

 $5.\frac{2}{5} \times \frac{5}{5} = -$

A.
$$\frac{2}{25}$$

B.
$$\frac{1}{5}$$

$$c. \frac{2}{5}$$

D.
$$\frac{5}{2}$$

6. The measure of the angle which the fraction $\frac{5}{12}$ represents it on the circle is

A. 90°

B. 150°

C. 210°

D. 300°

7. A rectangle of length 5 cm and width 4 cm , then its area = — cm²

A. 9

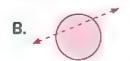
B. 18

C. 20

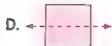
D. 40

8. Which of the following figures shows a line of symmetry?

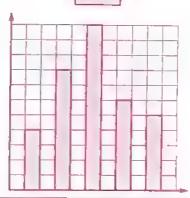








- 9. The opposite graph shows
 - A. a bar graph
 - B. a line plot
 - C. a double bar graph
 - D. a pictograph



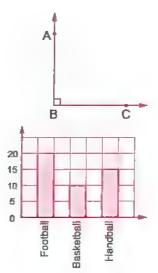
- 2. Answer the following questions.
 - 1. Martin has 18 pounds, he donated $\frac{2}{3}$ of the money to charity. How much did he donate?
 - 2. Find the result of:

The order is:

a.
$$6\frac{2}{9} - 3\frac{5}{9} = ---$$

b.
$$\frac{1}{5} \times 2 = -----$$

- 3. In the opposite figure:
 - a. The name of the angle is:
 - b. The type of the angle is: _____



- 4. By using the opposite graph:
 - a. How many boys prefer handball?
 - b. How many more boys chose football than basketball?
- 5. Arrange the following in an ascending order.



Health a prestruction to draw an angle of magazina 700

Use the protractor to draw an angle of measure 70°

7. Wesam bought 1.7 kilograms of tomatoes. Amira bought 1.5 kilograms of tomatoes. Who bought more?

Exam

1. Choose the correct answer.

- 1. All sides are equal in length is the
 - A. parallelogram B. rhombus
- C. trapezium
- D. rectangle
- 2. All angles in the equilateral triangle are
 - A. acute
- B. right
- C. obtuse
- D. otherwise
- 3. The fraction $\frac{1}{6}$ represents of the circle an angle of measure -
 - A. 30°
- C. 90°
- D. 360°
- _data on a graph. 4. A bar graph is used to display —
 - A. 1 group
- B. 2 group
- C. 3 group
- D. 4 group

- 5. 6 tens + 6 tenths = -
 - A. 66
- B. 6.6
- C. 60.6
- D. 0.66

- 6. The rectangle has _____ right angles.
 - A. 1
- B. 2

C. 3

D. 4

- $7.7 4\frac{1}{4} =$
 - **A.** $11\frac{1}{6}$ **B.** $3\frac{1}{6}$
- **C.** $3\frac{5}{4}$
- **D.** $2\frac{5}{6}$

- 8. $\frac{8}{16} = \frac{-}{2}$
- B. 4

C. 2

D. 1

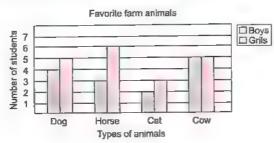
- 9. The following table can be represented
 - by ____
 - A. a line plot
 - B. a bar graph
 - C. a double bar graph
 - D. a pictograph

Engligh Math Science Subject Arabic 35 39 33 30 Bassem 38 37 25 40 Mone

2. Answer the following questions.

- 1. Jana ate $\frac{1}{3}$ of candy box, if there 27 pieces in the box. How many pieces did Jana eat?
- 2. In the opposite figure:
 - a. Number of girls who prefer horse

b. Number of boys who prefer dog more than cat



- 3. Salma has $\frac{33}{100}$ meter of cloth. She bought another $\frac{42}{100}$ merer. What is the total length of what Salma bought in the decimal form?
- 4. Use the protractor to draw angle with measure 40° What is the type of the angle?

5.Find.

a.
$$2\frac{4}{5} + 1\frac{1}{5} =$$

b.
$$1 - \frac{3}{4} =$$

- **6.** Sara had $4\frac{3}{7}$ cakes $\frac{1}{7}$ she gave $2\frac{1}{7}$ to her brother. How many cakes left did she have? The left = $\frac{1}{7}$ cakes.
- 7. Draw an obtuse triangle.



1. Choose the correct answer.

A. 10

B. 80

C. 100

D. 1000

2. The colored part in the opposite figure represents an angle of measure _____



B. 120°

C. 240°

D. 270°



to represent it on the number line.

A. a bar graph

B. a pictograph

C. a double bar graph.

D. a line plot.

4. The number of axes of symmetry of an equilateral triangle is _____



B. 2

C. 3

D. zero

5. The vertex of the opposite angle is

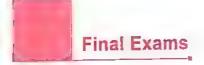


B. A

C. B

D. C





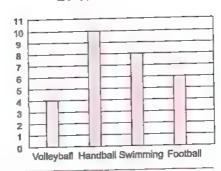
- 6. The place value of 5 in 6.52 is _____
 - A. tens
- B. ones
- C. tenths
- D. hundredths

- 7. All sides are equal in length in the
 - A. rectangle
- B. rhombus
- C. trapezium
- D. parallelogram

- 8. Standard form of six and three tenths is ___
 - A. 6.03
- **B**. 3.6
- **C.** 0.63

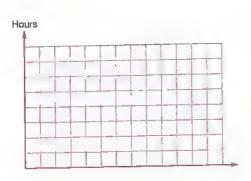
D. 6.3

- 9. The most preferred sport
 - is —
 - A. Volleyball
 - B. Handball
 - C. Swimming
 - D. Football



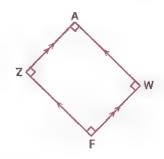
- 2. Answer the following questions.
 - 1. Ali walked $\frac{4}{10}$ km, then he walked $\frac{51}{100}$ km. What is the total distance did Ali walk?
 - 2. Draw an angle of measure 90°
 - 3. Arrange in an ascending order: 3.4 , 4.3 , 3.04 , 4.03
 - 4. Kamel recorded the lengths of two types of plants in four days as follow:

	Mon.	Wed.	Wed. Fri.		
Plant (1)	5 cm	$5\frac{1}{2}$ cm	6 cm	$6\frac{1}{5}$ cm	
Plant (2)	4 cm	$4\frac{2}{5}$ cm	$4\frac{3}{5}$ cm	5 cm	



Represent the above data using a double bar graph.

- 5. In the figure at the right, identify.
 - a. A pair of parallel line segments:
 - b. A pair of perpendicular line segments:



6.Find.

a.
$$6\frac{7}{8} - 4\frac{3}{8} =$$
 b. $3 + 1\frac{3}{5} =$

b.
$$3+1\frac{3}{5}=$$

7. Hady had 3 $\frac{2}{3}$ cookies , he ate 2 $\frac{1}{3}$ of them. How many cookies did he have left?

Exam 12

1. Choose the correct answer.

1, 0.18 = ____

- A. $\frac{1}{8}$
- B. $\frac{18}{100}$
- C. $1\frac{8}{10}$

D. $8\frac{1}{100}$

2. — is a unit fraction.

- A. $\frac{7}{4}$
- B. 7

c. 4/7

D. $\frac{1}{7}$

3. 5 Ones , 9 Tenths =

- A. 59
- **B.** 5.9
- C. 5.09
- D. 0.59

4. The suitable method to represent the favorite game for boys and girls is

- A. a line plot
- B. a bar graph
- C. a pictograph
- D. a double bar graph

5. The opposite two lines are

A. parallel.

B. perpendicular.

C. intersecting.

- D. not intersecting.
- 6. The name of the figure A
- В

- A. AB
- B. \overrightarrow{AB}
- C. AB

D. BA

7. Which type of graphs is suitable for this data?

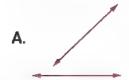
- A. line plot.
- B. bar graph.
- C. pictograph.
- D. double bar graph.

Name	Ahmed	Nora	Sally	Ola
Age	13	17	15	10

8. The measure of the angle which the fraction $\frac{1}{12}$ represents it on the circle is

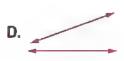
- A. 30°
- B. 60°
- C. 90°
- D. 180°

9. Which of the following figures shows two parallel lines?









2. Answer the following questions.

1. Order the following fractions in an ascending order: $\frac{4}{9}$, $\frac{7}{9}$, $\frac{1}{9}$, $\frac{5}{9}$

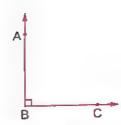
The order is:	2	
---------------	---	--

2. Maha drank $\frac{4}{10}$ liter of juice. Her sister drank $\frac{30}{100}$ liter of the same juice. How much juice did they drink together?



3. In the opposite figure :

- *The name of the angle _____
- *The type of the angle is _____



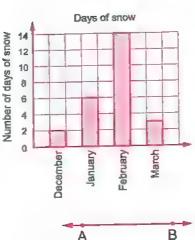
4. Complete the table:

Month	December	January	February	March
No. of days		_		

$$5.3 + 2\frac{1}{5} + 1\frac{1}{5} = ----$$

6.5
$$\frac{4}{9}$$
 - 2 $\frac{2}{9}$ = ----

7. Draw LM is perpendicular to AB



Exam 13

1. Choose the correct answer.

- is a way to represent, read and analyze the data.
 - A. Place value.
- B. Value.
- C. Graphs.
- D. Angle.
- 2. The horizontal and vertical lines of graphs are called ————
 - A. titles
- B. keys
- C. axes

- D. number of sets
- 3. The number of unit fraction in five-eighths = ----
 - A. 1
- **B**. 3

C. 5

D. 8

- 4. 0.3 0.14
 - Δ. <
- B. >

C. =

D. otherwise

- 5. $\frac{1}{7} + \frac{2}{7} + \frac{3}{7} = \frac{1}{7}$
 - A. 1
- B. 6

C. 7

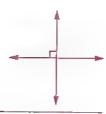
- **D.** 8
- 6. The quadrilateral that has 1 pair of parallel sides is called ______
- A. rectangle.
- B. trapezium.
- C. rhombus.
- D. parallelogram.
- 7. The measure of right angle ———— the measure of obtuse angle.
 - A. <
- B. >

C. =

- D. otherwise
- 8. The suitable graph to compare two similar sets of data that can be counted
 - S
 - A. line plot.
- B. bar graph.
- C. double bar graph.
- D. other wise.

- 9. The opposite drawn shape represents two

- A. perpendicular B. intersecting and not perpendicular
- C. parallel
- D. otherwise



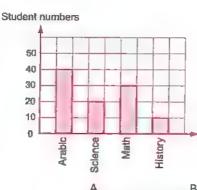
Answer the following.

$$1.3 + \frac{1}{7} + 2 + \frac{3}{7} =$$

2. Hadi studied Math for $1\frac{3}{4}$ hours and studied Arabic for $1\frac{1}{4}$ hours. How many hours did he study?

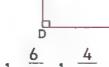


What is the number of students who like Math?



4. Complete using the opposite figure:

- a. The name of the figure is --
- b. DA and ———— are parallel.



- 5. Order the following fractions in an a descending order: $\frac{5}{7}$, $\frac{1}{7}$, $\frac{6}{7}$, $\frac{4}{7}$
- **6.** Hossam walked $\frac{35}{100}$ km, then he walked another $\frac{4}{10}$ km, what is the distance did Hossam walk all together?
- 7. Draw ∠ ABC with measure 120°



Choose the correct answer.

- B. >

D. otherwise

- 2. Which of the following is an improper fraction?

D. $\frac{5}{2}$

- 3. There are -— degrees in a circle.
 - A. 26°
- B. 360°
- C. 180°

D. 90°

- 4. The angle whose measure is 150° is called
- angle.
- D. straight

- B. right
- C. obtuse



- 5. The value of the digit 9 in 2.89 is _____
 - A. 0.9
- B. 9

C, 0.09

- D. 90
- 6. The triangle with equal side lengths is called ———
 - A. isosceles.
- B. scalene.
- C. equilateral.
- D. otherwise.

7. The opposite two lines

are -----

A. perpendicular.

B. intersecting.

C. parallel.

- D. otherwise.
- 8. Which of the following can be represented by a double bar graph?
 - A. Favorite animals.

- B. Mark of friends in Math.
- C. Mark of friends in Math and Arabic.
- D. Our heights.
- 9. Which type of graphs is suitable for
 - representing this data?
 - B. a bar graph.
 - C. a pictograph.

A. a line plot.

D. a double bar.

Name	Ahmed	Nora	Sally	Ole	
Age	13	17	15	10	

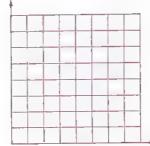
2. Answer the following questions.

$$1.3\frac{2}{5} - 2\frac{1}{5} = -$$

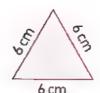
- 2. Write the number 3.89 in expended form
- 3. Amira drank $1\frac{2}{7}$ liter of water and Hana drank $1\frac{5}{7}$ liter of water. How much water did Amira and Hana drink?
- 4. Draw the angle XYZ of measure 90°.

- 5. Circle all decimals that are smaller than 4.5 : 1.8 $\,$, 7.15 $\,$, 4.9 $\,$, 3.8 $\,$, 6.01 $\,$, 4.35
- 6. The following table represents the number of participants in the school activities, represent these data by a bar line graph.

The activity	Social	Cultural	Sports	Art
number of participants	20	40	70	30



- 7. a. The type of the opposite triangle according
 - to its angles is _____ b. The perimeter of triangle =
- cm





1. Choose the correct answer.

- 1. To represent the number of studying hours for Yahiya and Ahmed in one week , you can use
 - A. a line plot.
- B. a bar graph.
- C. a double graph.
- D. a pictograph.

- 2.1.4 = ----
 - **A.** $\frac{14}{11}$
- B. $\frac{10}{14}$
- C. $\frac{14}{10}$

D. $3\frac{1}{4}$

- $3.\frac{2}{5} \times \frac{6}{6} =$
 - **A.** $\frac{2}{5}$
- **B**. $\frac{3}{5}$
- C. $2\frac{1}{11}$

D. $3\frac{1}{4}$

- 4. 0.25 _____ 0.3
 - A. >
- B. <

C. =

- D. otherwise
- 5. The angle with measure 93 degree is called _____ angle.
 - A. an acute
- B. a right
- C. an obtuse
- D. a straight

- 6. The opposite two lines are _____
 - A. parallel

B. perpendicular

C. intersecting

D. otherwise



- 7. $\frac{1}{3}$ of a circle is measured ———
 - A. 0°
- B. 120°
- C. 100°

- **D**. 360°
- 8. The opposite triangle has _____ right angle[s].
 - **A**. 1
- B. 2

C. 3

D. 4



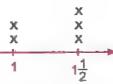
- 9. In the opposite line plot, the greatest
 - frequncey is ———
 - **A**. 0

C. 1

B. $\frac{1}{2}$

D. $1\frac{1}{2}$





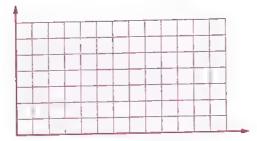
- 2. Answer the following questions.
 - 1. Order in an ascending order: $\frac{5}{11}$, $\frac{5}{6}$, $\frac{5}{5}$, $\frac{5}{10}$, $\frac{5}{7}$



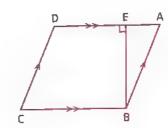
- **2.** Ahmed walked $\frac{3}{10}$ kilometers, then he walked another $\frac{25}{100}$ kilometers How long did Ahmed walk altogether?
- 3. Draw ∠ ABC with measure 100°
- 4. The following table represent the walking distance of some friends in km.

Represent it by a bar graph.

-	Name	Ahmed	Ali	Youssef	Omar	Mai
	Distance	6	3	4	2	3



- 5. Amgad ate $\frac{2}{5}$ of a pizza. Find the fraction of the remaining part of pizza.
- 6. Yasser walked $\frac{2}{10}$ km., and he stop 10 minutes, then he walked another $\frac{5}{10}$ km. What is the total sum of the distance he walked?
- 7. Complete using the opposite figure.
 - a. $\overline{\mathsf{AB}}$ and $\overline{\phantom{\mathsf{AB}}}$ are parallel.
 - b. BE is perpendicular to
 - c. EB and AD intersect at point





1. Choose the correct answer.

- 1. _____ is a measure of an acute angle.
 - A. 179°
- B. 120°
- C. 90°

D. 70°

- 2. The opposite two lines are _____
 - A. parallel

B. perpendicular

C. intersect

D. congruent



- 3. $\frac{7}{8}$ is closer to th benchmark fraction
 - **A.** 0
- **B**. $\frac{1}{2}$

C. 1

D. 2

- $4.1\frac{2}{5} + \frac{3}{5} = -$
 - **A.** $1\frac{5}{10}$
- B. 6_
- **C**. 2

- **D**. 5
- 5. The type of triangle whose side lengths are 10 cm , 8 cm and 6 cm is _____ triangle.
 - A. an isosceles
- B. an obtuse
- C. an acute
- D. a scalene
- 6. The measure of the angle that is $\frac{5}{12}$ of the circle is
 - A. 170°
- **B**. 150°
- C. 90°

D. 70°

- 7. 47 hundredths = -----
 - A. 0.47
- B. 4.7
- C. 0.74

- **D.** 47 10
- 8. To show types of pets that some people have at home, we don't use
 - A. a line plot
- B. a bar graph
- C. a double bar graph
- D. a pictograph

- 9. Data can be represented by
 - A. bars
- B. measure angle
- C. trianlge drawing
- D. otherwise

2. Answer the following.

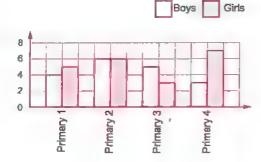
1. Order the following fractions from least to greatest: $\frac{2}{8}$, $\frac{9}{8}$, $\frac{5}{8}$, $\frac{1}{8}$

The order is:

- **2.** Jana bought $3\frac{3}{4}$ kg of oranges. She used $1\frac{2}{4}$ kg to make juice. How much orange is left?
- 3. Draw an angle of measure 80°

4. Complete the table:

Pupils	Primary 1	Primary 2	Primary 3	Primary 4
Boys		6	5	
Girls	5			7



5. Find.

$$a.\frac{5}{10} + \frac{32}{100}$$

b.
$$7\frac{7}{9} - 4\frac{5}{9}$$

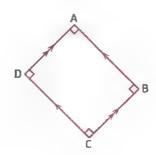
6. Manar walks $1\frac{1}{10}$ km in the morning and $\frac{9}{10}$ km in the evening.

What is the total distance that Manar walks?

The total distance = ----



- a. A pair of perpendicular line segments.
- b. A pair of parallel line segments.



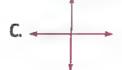
Exam 17

1. Choose the correct answer.

1. Which of the following show two parallel lines?



В.







- 2. Which of the following fractions is closer to the benchmark $\frac{1}{2}$?

- 3. The place value of the digit 7 in the number 3.57 is
 - A. tens
- B. tenths
- C. hundredths
- D. hundreds
- 4. The type of graph that is suitable to represent the ages of students in a class

 - A. line plot
- B. bar graph
- C. double bar
- D. otherwise

- $5.4 \times \frac{1}{3} = -$
 - A. $\frac{1}{3} + \frac{1}{3} + \frac{1}{3}$ B. $\frac{4}{3} + \frac{4}{3} + \frac{4}{3}$ C. $4 + \frac{1}{3}$
- D. $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$
- 6. Which of the following shows a line of symmetry?









- 7. The opposite two lines are
 - A. parallel.

B. intersecting

C. perpendicular

- D. otherwise

16

- 8. By using the opposite line plot the number of children whose ages are 14 years old is_
 - A. 22

- **B**. 5
- D. 15
- Each x = 2 children
- **C**. 3 **9.** The fraction $\frac{6}{12}$ makes an angle of measure
 - in the circle.

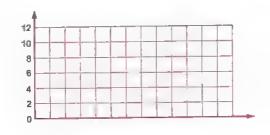
- A. 90°
- C. 150°
- D. 180°

Answer the following questions.

- Draw ∠ ABC of measure 120° and determine its type.
- 2. Hany read $\frac{5}{10}$ of a book in one day \circ in another day he read $\frac{35}{100}$ of that book. How much did he read in all?
- 3. Find the result: $5-3\frac{3}{7}=$
- 4. The following table represents the age of 4 students.

Name	Ahmed	Nora	Ola	Ali
Age	8	12	8	6

Represent these data by the gar graph.



5. Arrange the follo	owing decimals in a de	scending order 0.08 , 0	0.03,0.9,0.5
6. Mohamed had so	olve $\frac{1}{6}$ of his homewor	k before returning hor	ne, what is the fraction
Which represents	the remainder of the	homework?	
7. The type of △ AB	C:		A
a. According to it	s sides :		
b. According to it	s angles :		
	Exa	m 18	
Choose the correct	answer.		
1. The quadrilateral	that has only one pair	of parallel sides is a	
A. trapezium	B. parallelogram	C. rectangle	D. rhombus
2. A triangle whose	side lengths are 6 cm	,6 cm ,6 cm is called	triangle.
A. equilateral	B. isosceles	C. scalene	D. right
3. The vertex of the	opposite angle is		A .d
A. C		B . B	7
C. A		D. D	
4. In the number 91.	58, which digit is in th	e hundredths place?	вс
A. 1	B. 5	C. 8	D. 9
5. To compare betw	een maximum and mi	nimum temperature ir	n some cities , we use
a			
A. bar graph.	B. double bar graph	C. pictograph	D. line plot
6. When the data is	numbers , we use		
A. a line plot.		B. a pictograph.	
C. a double bar g	raph.	D. a Venn diagram.	
$7.5 \times \frac{3}{3} = $	_		
A. $\frac{3}{15}$	B . $\frac{5}{15}$	C. 5	D. $\frac{8}{3}$
8. Which of the follo	wing is a unit fraction		
A. $\frac{2}{6}$	B. $\frac{3}{7}$	c. $\frac{4}{5}$	D. $\frac{1}{4}$
9. The angle that me	easures 360º represen	ts a fraction of	of a circle.
A. $\frac{1}{2}$	B. $\frac{3}{4}$	c. 12 12	D. 4 10

1.



2. Answer the following questions.

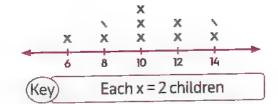
1. Dina bought 2 $\frac{5}{10}$ kg of tomato and $1\frac{3}{10}$ kg of carrot.

What is the total weight she bought?

- **2.** Arrange in an ascending order: $\frac{5}{9}$, $\frac{5}{8}$, $\frac{5}{6}$, $\frac{5}{5}$, $\frac{5}{10}$
- 3. Write the word form for: 63.72
- 4. By using the protractor, draw the angle with measure 90°, then classify the angle according to its measure.

The type of the angle is-

5. By using the opposite line plot what is the number of children who collected 12 stamps?



6. Find.

$$a.\frac{4}{10} + \frac{15}{100} =$$

b.
$$6\frac{3}{5} - 2\frac{1}{5} = -$$

7. Write the name of each pair of lines "parallel, intersecting or perpendicular".





Exam



1. Choose the correct answer.

- 1. The value of digit 7 in the number 34.79 is
 - A. 700
- **B**. 70
- C. 0.7

- **D.** 0.07
- 2. The measure of the angle which represents $\frac{3}{4}$ of the circle =
 - A. 90°
- B. 180°
- C. 270°

- **D.** 360°
- 3. The favourite subject for some students can be represented by
 - A. a pictograph
- B. a line plot
- C. a double by graph
- D. a bar graph

- 4. The angle with measure 60° is
 - A. acute
- B. right
- C. obtuse
- D. straight

5. In the opposite graph, the greatest frequency



- A. 0
- C. 1





- 6. The two parallel lines intersect at
 - A. zero
- B. 1

C. 2

D. 3

- 7. The opposite triangle is triangle.
 - A. an acute

B. an obtuse

points.

C. a right

D. an equilateral



8. 0.89

A. <

- 0.9

D. otherwise

- $9.\frac{1}{7} + \frac{1}{7} + \frac{1}{7} =$
 - A. $\frac{2}{7} + 1$ B. $\frac{1}{7} + 1$
- c. $\frac{3}{7}$

D. $\frac{2}{3} + 1$

2. Answer the following questions.

- 1. Hani drank 2 $\frac{4}{9}$ liters of water and Sami drank 1 $\frac{3}{9}$ liters of water , what is the total amount of water they both drank?
- 2. Nabil has 9 pens, he gave $\frac{2}{3}$ of them to his friends. How many pens did he give to his friends?
- 3. Draw the angle ABC with measure 140°
- 4. The opposite table shows the favorite games for some students. Study it and answer:

Study It allowers					
	Game	Football Basketball		Swimming	Gymnastics
	Number of students	48	24	32	12

- a. What is the most favorite game?
- b. How many students who prefer swimming?
- 5. Draw CD is parallel to AB



- 6. Order the following fractions from least to greatest.
 - $\frac{3}{8}$, $\frac{1}{8}$, $\frac{5}{8}$, $\frac{7}{8}$, $\frac{4}{8}$
 - The order is:
- 7. Find.
 - $a.\frac{4}{10} + \frac{2}{100} =$
- **b.** 5 2 $\frac{1}{4}$ =



Exam

1. Choose the correct answer.

- 1.0.6 _____0.02
 - A. >

C. =

- **D**. ≤
- 2. In the opposite line plot the greatest frequency is _
 - A. 0

 - C. 1

- 3. The equilateral triangle has _____ equal sides.
 - A. D

C. 2

D. 3

- 4. 5/2 is called _____
 - A. a proper fraction

B, an improper fraction.

C. a mixed number.

- D. a whole number.
- The opposite figure has _____ line(s) of symmetry.
 - A. 1
- **B**. 2

C. 3



- —— the measure of the right angle. 6. The measure of the obtuse angle
 - A. <
- B. >

 $C_{\cdot} =$

D. otherwise

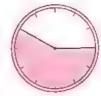
- 7. 3.2 = 3 + -
 - A. 0.2
- B. 2

- C. 20
- **D.** 200
- 8. The suitable method to represent the favorite colour for boys and girls is
 - A. line plot.
- B. bar graph. C. double bar.
- D. pictograph.
- 9. The angle which represents the colored part equals
 - A. 150°

B. 180°

C. 210°

D. 270°



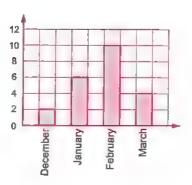
2. Answer the following questions.

- **1.** Arrange in an ascending order: $\frac{5}{9}$, $\frac{2}{9}$, $\frac{8}{9}$, $\frac{1}{9}$
- **2.** Hossam walked $\frac{7}{10}$ km, then he walked another $\frac{21}{100}$ km.

What is the total distance did Hossam walked?

3. Complete the table using the opposite graph:

Month	December	January	February	March
No. of days				-



4. Draw an angle with measure 60°

5. Ayman has $5\frac{1}{4}$ pounds, he gave his friend $3\frac{3}{4}$ pounds. What is the remainder with Ayman?

6. Draw a quadrilateral of 4 right angles and all sides are equal.

7. Find.

a.
$$1\frac{3}{4} + 2\frac{5}{4} =$$
 b. $3\frac{5}{6} - 1\frac{4}{6} =$

b.
$$3\frac{5}{6} - 1\frac{4}{6} =$$



Mathematics

GUIDEANSWERS

FREE PART

2



Answers of unit



Fractions

► Concept 1 : Composing and Decomposing Fractions

▶ Concept 2 : Comparing Fractions

▶ Concept 3 : Multiplication and Fractions



Exercise



- 1. a. 2,1, half, $\frac{1}{2}$
 - **b.** 3,1, third, $\frac{1}{3}$
 - c. 4,1, quarter or fourth, $\frac{1}{4}$
 - **d.** 5,1, fifth, $\frac{1}{5}$
 - e. 6.1.5ixth.
 - f. 8,1, eighth, $\frac{1}{8}$
- a. a number that names a part of a whole or a part of a group.
 - b. the number above the bar in a fraction that tells how many equal parts have been counted.
 - c. The number below the bar in a fraction that tells how many equal parts there are.
 - d. a fraction has a numerator of 1
 - e. a fraction its numerator is less than its denominator.

3.







c.
$$\frac{1}{4}$$
 $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$

- 4. a. 3
- b. 6
- **c.** 4

- **d**. 5
- e. 3
- f. 7

5.

a. $\frac{3}{4}$

$$\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

b. $\frac{2}{3}$

$$\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$$

c. $\frac{7}{10}$

$$\frac{7}{10} = \frac{1}{10} + \frac{1}{10}$$

d. $\frac{6}{8}$

$$\frac{6}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

e. $\frac{8}{16}$

$$\frac{8}{16} = \frac{1}{16} + \frac{1}{16}$$

 $f. \frac{5}{8}$

$$\frac{5}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

6. a. Fraction: $\frac{2}{4}$

Unit fraction: $\frac{1}{4}$

Equation: $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$

b. Model:



Unit fraction: $\frac{1}{6}$

Equation: $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{5}{6}$

Answers

c. Fraction: $\frac{3}{8}$

Equation: $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{3}{8}$

d. Model:

Fraction: $\frac{2}{3}$

Unit fraction: $\frac{1}{3}$

- **7.** a. 5
- b. 2
- **c**. 3
- d. 2

8.

a.
$$1 = \frac{6}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

b.
$$1 = \frac{3}{3} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$$

c.
$$\frac{4}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

d.
$$\frac{5}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

9.

a.
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

b.
$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$$

$$c.\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

d.
$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

e.
$$\frac{1}{6} + \frac{1}{6}$$

$$f_{1}, \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11}$$

10. [Answers may vary]

a.
$$\frac{3}{5} = \frac{1}{5} + \frac{2}{5}$$
, $\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

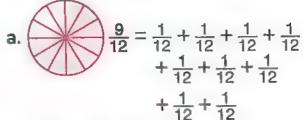
b.
$$\frac{7}{8} = \frac{2}{8} + \frac{5}{8}$$
, $\frac{7}{8} = \frac{1}{8} + \frac{2}{8} + \frac{4}{8}$

$$c, \frac{5}{6} = \frac{2}{6} + \frac{3}{6}, \frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

d.
$$\frac{4}{9} = \frac{2}{9} + \frac{2}{9}$$
, $\frac{4}{9} = \frac{1}{9} + \frac{1}{9} + \frac{2}{9}$

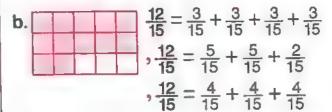
e.
$$\frac{4}{7} = \frac{1}{7} + \frac{3}{7}$$
, $\frac{4}{7} = \frac{2}{7} + \frac{2}{7}$

11. (Answers may vary)



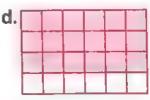
$$\frac{9}{12} = \frac{4}{12} + \frac{5}{12}$$

$$\frac{9}{12} = \frac{3}{12} + \frac{3}{12} + \frac{3}{12}$$





$$\frac{15}{18} = \frac{5}{18} + \frac{5}{18} + \frac{5}{18}$$
$$\frac{15}{18} = \frac{10}{18} + \frac{3}{18} + \frac{2}{18}$$



$$\frac{18}{24} = \frac{6}{24} + \frac{6}{24} + \frac{6}{24}$$

$$\frac{18}{24} = \frac{10}{24} + \frac{5}{24} + \frac{3}{24}$$

12. (Answers may vary)

a.
$$\frac{7}{8} = \frac{6}{8} + \frac{1}{8}$$

$$,\frac{7}{8}=\frac{2}{8}+\frac{1}{8}+\frac{4}{8}$$

b.
$$\frac{6}{10} = \frac{5}{10} + \frac{1}{10}$$

$$\frac{6}{10} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{3}{10}$$

c.
$$\frac{10}{16} = \frac{5}{16} + \frac{5}{16}$$

$$\frac{10}{16} = \frac{6}{16} + \frac{2}{16} + \frac{2}{16}$$

d.
$$\frac{12}{20} = \frac{10}{20} + \frac{2}{20}$$

$$\frac{12}{20} = \frac{5}{20} + \frac{5}{20} + \frac{1}{20} + \frac{1}{20}$$

- 13. a. $\frac{1}{4}$
- **b.** $\frac{7}{10}$

c. 8

d. 4

- **e.** $\frac{2}{3}$
- $f. \frac{4}{5}$

 $g.\frac{5}{9}$

 $h.\frac{4}{10}$

i. 1

j. 5

k. 9

- 1. =
- $m.\frac{3}{5}$
- $n.\frac{1}{3} + \frac{1}{3}$
- $0.\frac{1}{7} + \frac{1}{7} + \frac{1}{7}$
- p. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

14.

Eman's family

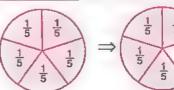


Eman's family will get larger pieces.

15. $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

He will need to fill the cup 3 times to complete the recipe.





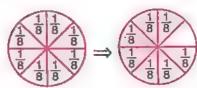
Whole bag The rest

The rest =
$$\frac{4}{5}$$

First way =
$$\frac{2}{5} + \frac{2}{5}$$

Second way = $\frac{1}{5} + \frac{3}{5}$

17.



The fraction that represents the remaining parts is $\frac{7}{8}$

Answers of multiple choice questions

- 1. C 2. C 3. A 4. D 5. C 6. D 7. A 8. C 9. A

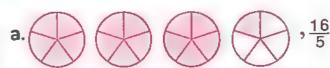
- 10. C 11. C 12. A

Exercise 2

- a. A proper fraction 1.
 - b. An improper fraction
 - c. An improper fraction
 - d. A proper fraction
 - e. A mixed number
 - f. A mixed number
- a. An improper fraction
 - b. A mixed number
 - c. A proper fraction
- 3. a. $2\frac{2}{6}$ b. $1\frac{1}{3}$ c. $3\frac{4}{6}$ d. $2\frac{1}{4}$
- 4. a. $\frac{9}{4} = 2\frac{1}{4}$ b. $\frac{11}{3} = 3\frac{2}{3}$

 - c. $\frac{35}{8} = 4\frac{3}{8}$ d. $\frac{24}{8} = 3$

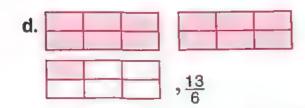
5.



Answers

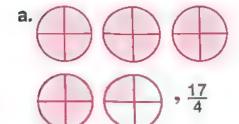






6. a. $\frac{6}{5}$, $1\frac{1}{5}$ b. $\frac{9}{6}$, $1\frac{3}{6}$ c. $\frac{5}{4}$, $1\frac{1}{4}$ d. $\frac{7}{6}$, $1\frac{1}{6}$

7.



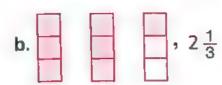




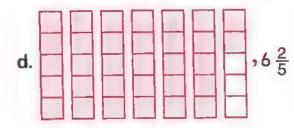


(Models may vary)









(Models may vary)

- 9. **a.** $\frac{7}{2}$ **b.** $\frac{13}{6}$ **c.** $\frac{55}{8}$
 - **d.** $\frac{21}{4}$ **e.** $\frac{21}{5}$ **f.** $\frac{20}{3}$
 - g. $\frac{38}{3}$ · h. $\frac{37}{4}$ i. $\frac{42}{5}$
- **10.** a. $4\frac{1}{2}$ b. $3\frac{4}{5}$ c. $8\frac{1}{3}$
 - d. 7 e. $4\frac{2}{8}$ f. 7
 - g. 9 h. $3\frac{1}{9}$ i. $5\frac{3}{4}$

11. a. less b. improper

- c. $\frac{15}{4}$ d. $\frac{7}{2}$ e. $\frac{9}{4}$
- f. $\frac{23}{7}$ g. $5\frac{2}{3}$ h. $1\frac{2}{5}$
- i. $6\frac{2}{3}$ j. $4\frac{1}{4}$ k. 1,2,3,4
- L. 10 m. 21 n. 25
- o. 3 p. 4 q. 9

12. a. $\frac{1}{5}$ b. 8 c. $\frac{8}{5}$

13. The perimeter = $\frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$ $=\frac{12}{9}=1\frac{4}{9}$ meter.

Answers of multiple choice questions

Α

2. D

3. C

4. В

5. D 6. C

7. В 8. C

9. C

10. B

Exercise 3

1. $a. \frac{2}{3} + \frac{2}{3} + 1 + 1 + 1 = \frac{4}{3} + 3$ $=1\frac{1}{3}+3$ $=4\frac{1}{2}$

b. $\frac{1}{4} + 1 + \frac{1}{4} + 1 = 2 + \frac{2}{4} = 2\frac{2}{4}$

c. $\frac{2}{4} + 1 + 1 + 1 + \frac{1}{4} = 3 + \frac{3}{4} = 3 \frac{3}{4}$

d. $1+1+\frac{2}{5}+\frac{1}{5}=2+\frac{3}{5}=2\frac{3}{5}$

2. a. $\frac{5}{5} = 1$

b. $\frac{7}{9} + 4 = 4\frac{7}{9}$

c. $\frac{11}{12} + 5 = 5 \frac{11}{12}$ d. $2 + \frac{3}{7} = 2 \frac{3}{7}$

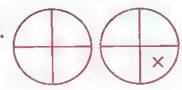
e. $7 + \frac{1}{2} = 7 \frac{1}{2}$

f. $4 + \frac{6}{5} = 4 + 1\frac{1}{5} = 5\frac{1}{5}$

g. $6 + \frac{9}{8} = 6 + 1\frac{1}{8} = 7\frac{1}{8}$

h. $7 + \frac{8}{6} = 7 + 1\frac{2}{6} = 8\frac{2}{6}$

3.



 $2 - \frac{1}{4} = 1 \frac{3}{4}$



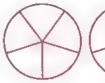
 $1 - \frac{2}{5} - \frac{1}{5} = \frac{2}{5}$

c. ××

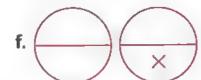
 $1 - \frac{2}{5} = \frac{3}{5}$

 $1 - \frac{2}{8} = \frac{6}{8}$

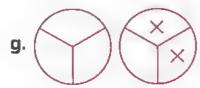




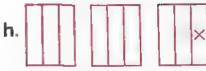




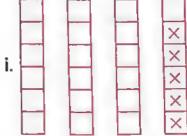
 $2 - \frac{1}{2} = 1\frac{1}{2}$



 $2 - \frac{2}{3} = 1\frac{1}{3}$



$$3 - \frac{1}{3} = 2\frac{2}{3}$$



$$4 - \frac{5}{6} = 3\frac{1}{6}$$

4. **a.**
$$\frac{5}{12} + \frac{2}{12} + \frac{6}{12} = \frac{13}{12} = 1\frac{1}{12}$$

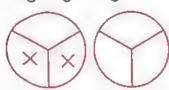
b. $1 + 2 + \frac{1}{12} + \frac{3}{12} + \frac{4}{12} = 3 + \frac{8}{12}$

b.
$$1+2+\frac{1}{5}+\frac{3}{5}+\frac{4}{5}=3+\frac{8}{5}$$

= $3+1\frac{3}{5}$
= $4\frac{3}{5}$

c.
$$1 - \frac{3}{6} - \frac{1}{6} = \frac{2}{6}$$

d.
$$2 - \frac{1}{3} - \frac{1}{3} = 1\frac{1}{3}$$



e.
$$1 + \frac{1}{7} + 2 + \frac{3}{7} = 3 + \frac{4}{7} = 3\frac{4}{7}$$

f.
$$3 - \frac{2}{3} - \frac{1}{3} = 2$$



5.

a. Number line: $2\frac{1}{5} + \frac{7}{5}$



Model:





Equation: $2\frac{1}{5} + 1\frac{2}{5} = 3\frac{3}{5}$

b. Number line: $1\frac{1}{4} + \frac{3}{4}$





Equation: $1\frac{1}{4} + \frac{3}{4} = 1\frac{4}{4} = 2$

c. Number line: $2\frac{1}{6} + \frac{11}{6}$



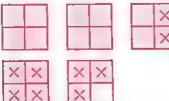


Equation: $2\frac{1}{6} + 1\frac{5}{6} = 3\frac{6}{6} = 4$

d. Number line: $4\frac{3}{4} - \frac{9}{4}$



Model:

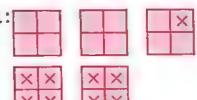


Equation: $4\frac{3}{4} - 2\frac{1}{4} = 2\frac{2}{4}$

e. Number line: $5 - \frac{9}{4}$

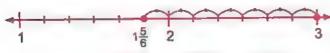


Model:



Equation: $5 - 2\frac{1}{4} = 2\frac{3}{4}$

f. Number line: $3 - \frac{7}{6}$



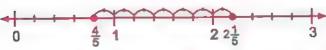
Model:





Equation:
$$3 - 1\frac{1}{6} = 1\frac{5}{6}$$

g. Number line: $2\frac{1}{5} - \frac{7}{5}$



Model:







Equation: $2\frac{1}{5} - 1\frac{2}{5} = \frac{4}{5}$

6. a.
$$3\frac{6}{9}$$

b.
$$3\frac{7}{5} = 4\frac{2}{5}$$

c.
$$4\frac{3}{5}$$

d.
$$2\frac{1}{6}$$

$$e.7\frac{6}{6} = 8$$

f.
$$5\frac{4}{7}$$

g.
$$1\frac{1}{5}$$

h.
$$1\frac{4}{9}$$

i.
$$2\frac{1}{7}$$

j.
$$\frac{7}{8}$$

k.
$$1\frac{3}{5}$$

$$1.6\frac{4}{7}$$

7. **a**. $3\frac{3}{9}$ **b**. $1\frac{1}{5}$ **c**. $\frac{1}{3}$ **d**. $2\frac{9}{10}$

b.
$$1\frac{1}{5}$$

c.
$$\frac{1}{3}$$

$$d.2\frac{9}{10}$$

e.
$$2\frac{2}{3}$$
 f. $5\frac{4}{7}$ g. 6

$$f. 5 \frac{4}{7}$$

i.
$$\frac{4}{7}$$
 j. $4\frac{3}{5} - 3\frac{2}{5} = 1\frac{1}{5}$

k.
$$6\frac{5}{6} - 4\frac{5}{6} = 2$$

$$1.7\frac{5}{9} - 3\frac{1}{9} = 4\frac{4}{9}$$

$$\mathbf{m.}\,2\,\frac{1}{4}+3\,\frac{2}{4}=5\,\frac{3}{4}$$

$$\mathbf{n.3}\,\frac{1}{3} + 1\,\frac{1}{3} = 4\,\frac{2}{3}$$

$$0.4\frac{4}{5} - 1\frac{1}{5} = 3\frac{3}{5}$$

$$p.1\frac{5}{7} + 2\frac{3}{7} = 3\frac{8}{7} = 4\frac{1}{7}$$

$$q.3-1\frac{1}{7}=1\frac{6}{7}$$

r.
$$4\frac{1}{4} - 2\frac{3}{4} = 1\frac{2}{4}$$

5.
$$5-3\frac{1}{4}=1\frac{3}{4}$$

8. Ahmed planted in both of two days = $\frac{3}{9} + \frac{5}{9} = \frac{8}{9}$ of the seeds.

9. Salma bought

$$=3\frac{1}{8}+1\frac{5}{8}=4\frac{6}{8}$$
kg

10. Seif studied in all =
$$1\frac{1}{4} + \frac{3}{4} = 1\frac{4}{4}$$

= 2 hours

11. What Manar needs more

$$=\frac{5}{8}-\frac{2}{8}=\frac{3}{8}$$
 liter.

12. The difference between waleed

and Ali =
$$2 \frac{3}{8} - 1 \frac{1}{8}$$

= $1 \frac{2}{8}$ of cakes.

13. The left = $1 - \frac{3}{4} = \frac{1}{4}$ of the loaf.

- **14.** The left = $24\frac{1}{2} 22\frac{1}{2} = 2$ pounds.
- **15.** The left = $3\frac{1}{4} 2\frac{3}{4}$ $=2\frac{5}{4}-2\frac{3}{4}$ $=\frac{2}{4}$ cookies.
- **16.** The left = $2\frac{1}{4} 1\frac{2}{4} = 1\frac{5}{4} 1\frac{2}{4}$ $=\frac{3}{4}$ pans of butter.
- 17. What she will use $=\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}=2$ teaspoons.

- **18.** For example: $2\frac{2}{9} + 3\frac{5}{9}$
 - Esslam has $2\frac{2}{9}$ kg of apple and his brother has $3\frac{5}{9}$ kg of apple. What is the total mass with Esslam and his brother? They has = $2\frac{2}{9} + 3\frac{5}{9} = 5\frac{7}{9}$ kg [Answer may vary]

Answers of multiple choice questions

- - 2. C 3. A
- 4. B 5. D 6. A
- 7. B 8. B 9. D
- 10. A 11. A 12. C
- 13. B

Comparing Fractions

Exercise 4.



- 1. a. $\frac{5}{8} > \frac{3}{8}$ b. $\frac{2}{5} < \frac{2}{3}$ c. $\frac{1}{4} < \frac{2}{4}$
- **d.** $\frac{3}{6} = \frac{3}{6}$ **e.** $\frac{4}{5} > \frac{4}{6}$ **f.** $\frac{5}{8} < \frac{5}{6}$

2.





- <









- <





- <





f.



- <

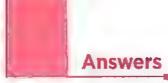
- 3. a. >
- b. <
- C. <

- d. <
- e. <
- f. <

- q. <
- i. >

- k. >
- **a.** $\frac{2}{5}$ **b.** $\frac{1}{4}$
- c. 3
- d. $\frac{4}{9}$ e. $\frac{5}{8}$ f. $\frac{3}{3}$

- g. $\frac{4}{5}$ h. $\frac{8}{10}$
- 5. $a. \frac{1}{11}, \frac{4}{11}, \frac{6}{11}, \frac{9}{11}$
 - b. $\frac{2}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{8}{7}$
 - c. $\frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, $\frac{8}{8}$
 - $d.\frac{2}{10},\frac{2}{9},\frac{2}{5},\frac{2}{4},\frac{2}{3}$
 - e. $\frac{3}{12}$, $\frac{3}{8}$, $\frac{3}{6}$, $\frac{3}{5}$
 - $f. \frac{3}{12}, \frac{3}{8}, \frac{3}{6}, \frac{3}{5}, \frac{3}{3}$
 - $g, \frac{1}{3}, 1, \frac{5}{3}$
- 6. a. $\frac{5}{7}$, $\frac{4}{7}$, $\frac{3}{7}$, $\frac{1}{7}$
 - **b.** $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{7}$, $\frac{1}{10}$
 - $c. \frac{7}{11}, \frac{5}{11}, \frac{4}{11}, \frac{3}{11}, \frac{2}{11}$
 - $\mathbf{d}, \frac{5}{5}, \frac{5}{6}, \frac{5}{7}, \frac{5}{9}, \frac{5}{11}$
- 7.
- b. <
- c. Yes, because improper fractions are greater than 1,50 they always are greater than the proper fractions.

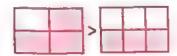


8. Othman ate more

because $\frac{4}{6} > \frac{4}{8}$

9. Lamia ate more than Ganna.

because $\frac{3}{4} > \frac{3}{6}$



10. I perfere $\frac{6}{12}$ of candy bar because $\frac{6}{12} > \frac{5}{12}$

Answers of multiple choice questions

- 4. C 5. D 6.

- 7. A 8. D
- C

- 10. A
- **11.** B
- 12.

Exercise 5

- a. Equivalent 1.
- b. Equivalent
- c. Not equivalent
- d. Not equivalent

- e. Not equivalent f. Equivalent
- a. 2 2.
- b. 4
- c. 2

- d, 8
- e. 14 f. 18

- g. 6
- h. 3 i. 6
- 3. a. $\frac{4}{10}$ b. $\frac{8}{12}$ c. $\frac{2}{12}$
- d. $\frac{3}{4} = \frac{6}{8}$ e. $\frac{1}{3} = \frac{4}{12}$ f. $\frac{4}{9} = \frac{8}{18}$

- a. [1] Equivalent
 - [2] Not equivalent
 - [3] Equivalent
 - [4] Not equivalent
 - [5] Equivalent
 - [6] Not equivalent

 - **b.** $\frac{2}{8}$, $\frac{3}{12}$ **c.** $\frac{4}{6}$, $\frac{6}{9}$ or $\frac{8}{12}$
- 5. a. 4 b. 8 c. 4
- d. 9
- 6. a. $\frac{2}{4}$ b. $\frac{6}{4}$ c. $\frac{8}{4}$
- d. $\frac{2}{4}$ e. $\frac{1}{4}$ f. $\frac{4}{4}$

Answers of multiple choice questions

- D 2. B 3. B

- C 5. D 6. D
- 7.
 - B 8. A

Exercise 6

First Problems on benchmark fractions

1.

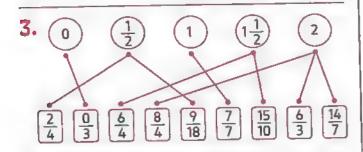
a. $0 \frac{1}{8} \frac{3}{8} \frac{1}{2} \frac{5}{8} \frac{7}{8} 1$

$$\frac{1}{2}$$
,1,0, $\frac{1}{2}$

0 2 5 1 7 12 $1,\frac{1}{2},\frac{1}{2},0$

2.

Fraction	Numberline	0	1/2	1
24	0 2/4 1		~	
1/6	0 1 1	~		
78	0 7/8 1			~
4 10	0 4/10 1		~	



a. (1) At the beginning: $0 = \frac{0}{8}$

At the middle: $\frac{1}{2} = \frac{4}{8}$

At the end = $1 = \frac{8}{8}$

(2) At the beginning: $0 = \frac{0}{10}$

At the middle: $\frac{1}{2} = \frac{5}{10}$

At the end = $1 = \frac{10}{10}$

• 0

[3] At the beginning: $0 = \frac{0}{12}$

At the middle: $\frac{1}{2} = \frac{6}{12}$

At the end = $1 = \frac{12}{12}$

a. $\frac{1}{2}$ b. 1

b. Sherif must place the benches at:

0 km $\frac{2}{4} \text{ km}$ $\frac{4}{4} \text{ km}$

 $\frac{6}{4}$ km $\frac{2}{2}$ km

Problems on comparing Second fractions using benchmark fractions

a. >,>,> b. <,<,<

c. >,>,> d. >,>,>

2. a. >

c. =

h. >

k. <

3. **a.** $\frac{2}{10}$, $\frac{3}{6}$, $\frac{6}{8}$ **b.** $\frac{2}{6}$, $\frac{5}{10}$, $\frac{7}{12}$

c. $\frac{9}{9}$, $\frac{5}{6}$, $\frac{1}{4}$ d. $\frac{5}{5}$, $\frac{10}{11}$, $\frac{10}{20}$

4. a. $\frac{2}{5}$

b. $\frac{7}{16}$

Story problems

1.

First cake $\longrightarrow \frac{5}{10} = \frac{1}{2}$

Second cake $\frac{5}{6} > \frac{1}{2}$

So, the second cake had more eaten.

2.

Rashad ate more because

 $\frac{4}{8} = \frac{1}{2}, \frac{4}{6} > \frac{1}{2}$



3.

Mariam ate $\frac{4}{12}$ and $\frac{4}{12} < \frac{1}{2}$ Jana ate $\frac{3}{6}$ and $\frac{3}{6} = \frac{1}{2}$

Then, Jana ate more than Mariam.

4.

Hatem made $\frac{14}{18}$ and $\frac{14}{18} > \frac{1}{2}$ Amir made $\frac{8}{16}$ and $\frac{8}{16} = \frac{1}{2}$ So, Hatem made a larger fraction of the shots taken.

5.

Mazen's candy bar



Mazen ate $\frac{1}{2}$ of the bar

Ezz's candy bar



Ezz ate $\frac{1}{2}$ of the bar

But the two candy bars are not the same size.

So, $\frac{1}{2}$ of Mazen's bar > $\frac{1}{2}$ of Ezz's bar

6. A

Answers of multiple choice questions

B

B

- 2.
- 3. B

- 4. B
- **5.** B
- 6. C
- 7. C 8. D
- 9. C
- **10.** B 11.

Concept 3

Multiplication and Fractions

Exercise 7



- 1. a. $\frac{4}{12}$
- **b.** $\frac{10}{25}$ **c.** $\frac{6}{14}$

- d. $\frac{1}{2}$
- f. $(\div 10)$, $\frac{2}{5}$
- 2. $a.\frac{8}{12}$
- c. 18

- **d.** $\frac{18}{22}$ **e.** $\frac{56}{72}$ **f.** $\frac{80}{130}$
- **q**. 3
- 3. a. $\frac{2}{12}$ b. $\frac{6}{9}$
- c. $\frac{1}{3}$
- d. $\frac{1}{5}$ e. $\frac{2}{3}$

[Answers may vary]

- **4. a.** $\frac{4}{10} = \frac{6}{15} = \frac{8}{20}$ **b.** $\frac{1}{3} = \frac{3}{9} = \frac{5}{15}$

 - c. $\frac{8}{12} = \frac{12}{18} = \frac{20}{30}$ d. $\frac{8}{20} = \frac{12}{30} = \frac{16}{40}$

 - **e.** $\frac{1}{3} = \frac{2}{6} = \frac{4}{12}$ **f.** $\frac{2}{10} = \frac{1}{5} = \frac{5}{25}$

(Answers may vary)

- 5. a. $\frac{4}{6}$, $\frac{6}{9}$, $\frac{8}{12}$, $\frac{10}{15}$, $\frac{12}{18}$
 - $\mathbf{b}, \frac{1}{2}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}, \frac{6}{12}$
 - $c. \frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \frac{15}{25}, \frac{30}{50}$
 - $d.\frac{1}{3},\frac{2}{6},\frac{4}{12},\frac{5}{15},\frac{6}{18}$

[Answers may vary]

- a. True 6.
- b. False
- c. False

- d. False
- e. False
- f. True
- g. True
- h. False
- i. False

- **a.** 15
- **b.** 10 **c.** 10
- e. 4
- f. 15 q. 45 h. 45

- i. 1 j. 6 k. 16
- m. 39 n. 3 o. 4 p. 6
- q. 15 r. 15 s. 12 t. 5
- a. 3 8.
- **b.** 3
- c. 5

d. 9

L. 1

- d. 1
- e. 15
- f. 6
- 9. a. 2 , $1=\frac{2}{2}$ b. 4 , $1=\frac{4}{4}$

 - **c.** 10 , $1 = \frac{10}{10}$
 - d. $\frac{2}{2} = \frac{4}{4} = \frac{10}{10}$, when the numerator and denominator are the same, the fraction is equivalent to 1.
 - e. 25

10.

 $\frac{2}{3} = \frac{?}{9}$, then the number of cookies $= 2 \times 3 = 6$ cookies.

11.

x 3

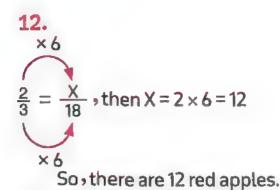
 $\times 3$

 $\frac{3}{5} = \frac{X}{15}$, then $X = 3 \times 3 = 9$

×3

So, there are 9 chocolate cakes.





13.

The fraction of Sally's team

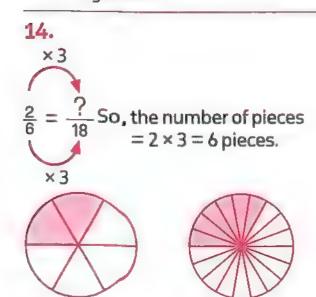
$$=\frac{10}{15}=\frac{2}{3}$$

$$\div 5$$

The fraction of Fatma's team.

$$=\frac{?}{6}=\frac{2\times}{3}$$

So, Fatma's team won 2 × 2 = 4 games.



16

- 15. The simplest form of what Omar gave his friend Heba $=\frac{3}{12}=\frac{3\div 3}{12\div 3}=\frac{1}{4}$
- **16. a.** $\frac{6}{12}$ or $\frac{1}{2}$ [6 pieces] **b.** $\frac{4}{12}$ or $\frac{1}{3}$ [4 pieces] **c.** $\frac{2}{12}$ or $\frac{1}{6}$ **d.** $\frac{4}{24}$ or $\frac{2}{12}$
- 17. $\frac{1}{2}$

Answers of multiple choice questions

- C 2. B 3. D 4. C
- 5. D 6. C 7. B 8. A 9. A 10. C 11. B 12. A

Exercise 8

1.

Addition sentence: $\frac{1}{5} + \frac{1}{5}$ Multiplication sentence: $2 \times \frac{1}{5}$

Addition sentence: $\frac{1}{7} + \frac{1}{7} + \frac{1}{7}$ Multiplication sentence: $3 \times \frac{1}{7}$

Addition sentence:

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

Multiplication sentence: $5 \times \frac{1}{8}$

Addition sentence:

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

Multiplication sentence: $4 \times \frac{1}{6}$

a. Fraction: $\frac{5}{6}$

Addition sentence:

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

Multiplication sentence: $5 \times \frac{1}{6}$

b. Fraction: $\frac{3}{5}$

Addition sentence: $\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

Multiplication sentence: $3 \times \frac{1}{5}$

c. Fraction: $\frac{2}{4}$

Addition sentence: $\frac{1}{4} + \frac{1}{4}$

Multiplication sentence: $2 \times \frac{1}{4}$

d. Fraction: $\frac{6}{8}$

Addition sentence:

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

Multiplication sentence: $6 \times \frac{1}{8}$

3. a.



C.



- 4. a. $\frac{7}{8}$

- g. $\frac{3}{3} = 1$ h. $\frac{9}{7}$ i. $\frac{6}{9}$
- **5.** a. —→3
- b. ——▶1
- c. > 5
- d. --- 2
- e. ----4
- 6. What she drinks

$$=\frac{1}{5}+\frac{1}{5}+\frac{1}{5}+\frac{1}{5}=\frac{4}{5}$$

"Sum of unit fractions"

What she drinks = $4 \times \frac{1}{5} = \frac{4}{5}$

"Multiplication sentence"



"Bar model"

- 7. What it will take = $\frac{2}{6} \times 2$ $=\frac{4}{6}$ of a bag of flour.
- 8. Khalid ate = $\frac{1}{6} \times 24 = \frac{24}{6}$ = 4 pieces.
- Number of chocolate cake 9. $=\frac{2}{3}\times 9=\frac{18}{3}=6$ chocolate cakes.
- 10. Number of hours $=\frac{1}{2} \times 24 = \frac{24}{3} = 8$ hours.
- 11. When we multiply a proper fraction and a whole number (except 0 and 1) the product is less than the whole number factor, but greater than the fraction factor. This is different from multiplying two whole numbers because the product is always greater than either factor.

Answers of multiple choice questions

- 2. B 3. B 4. C
- 5. C 6. A 7. B 8.

- A 10. B
- 11. B



Unit 9 Assessment

1.

1. B

2. C

3. D

4. C

5. B

6. C

7. B

2.

1. $3\frac{2}{9}$ **2.** 25 **3.** $5\frac{4}{5}$ **4.** $6\frac{5}{6}$

5. $5\frac{4}{7}$ 6. $1\frac{7}{9}$ 7. $\frac{2}{4}$ 8. $3\frac{5}{7}$

3.

1. C

2. D

3. C

4. B

5. C

6. D

7. D

4.

1. What Sara needs = $\frac{7}{10} - \frac{2}{10} = \frac{5}{10}$ of a jug of milk.

2. The order is: $\frac{9}{9}$, $\frac{7}{9}$, $\frac{5}{9}$, $\frac{4}{9}$, $\frac{1}{9}$

3. The order is: $\frac{3}{8}$, $\frac{5}{10}$, $\frac{7}{9}$

4. The total amount = $3\frac{4}{6} + 2\frac{2}{6}$

$$=5\frac{6}{6}=6$$
 kg

Answers of unit

10

Decimals

▶ Concept 1 : Understanding Decimals

▶ Concept 2 : Decimals and Fractions

▶ Concept 3 : Operations on Decimals



Concept 1

Understanding Decimals

Exercise 9

- **a.** 0.3
- **b.** 0.8
- **c.** 0.4

- **d.** 0.7
- **e.** 0.5
- f. 2.8

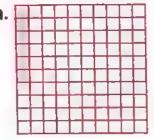
- g. 1.2
- a. 0.46
- **b**. 0.13
- **c.** 0.98
- d. 1.33
- **e.** 1.03
- 3.

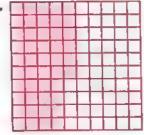


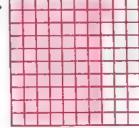




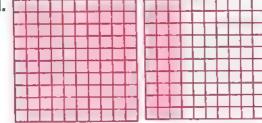


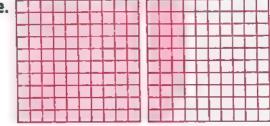






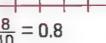
d.





5.





20

- 6. a. 0.7
- **b.** 0.5
- c. 0.3

- d. 0.2
- **e.** 0.27
- f. 0.15
- **g.** 0.07 **h.** 0.03
- 7. **a.** $\frac{2}{10}$ **b.** $\frac{6}{10}$ **c.** $\frac{8}{10}$

- d. $\frac{1}{10}$ e. $\frac{23}{100}$ f. $\frac{69}{100}$ g. $\frac{8}{100}$ h. $\frac{2}{100}$
- 8. **a.** $\frac{4}{10} = 0.4$ **b.** $\frac{7}{10} = 0.7$

 - **c.** $\frac{9}{10} = 0.9$ **d.** $\frac{5}{10} = 0.5$

 - **e.** $\frac{4}{10} = 0.4$ **f.** $\frac{64}{100} = 0.64$

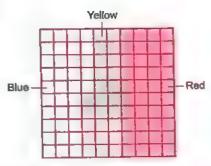
 - g. $\frac{76}{100} = 0.76$ h. $\frac{3}{100} = 0.03$
 - i. $\frac{21}{100} = 0.21$ j. $\frac{49}{100} = 0.49$
- $0.1 = \frac{1}{10}$ and $\frac{1}{10}$ means 1 from a whole divided into 10 equal parts.



10. Blue

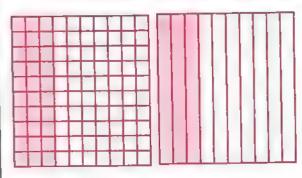
0.2 of the strip had stars.

11.



Yellow part = 0.25

12. Adel is correct, 0.30 and 3 tenths [0.3] represent the same amount.



Aisha

Adel

13. Length of the paper clip = 5 cm

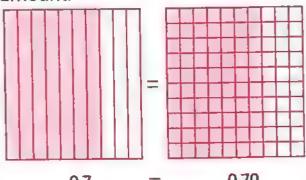
Fraction: $\frac{5}{100}$ m

Decimal: 0.05 m

14.

0.70 is equal to 0.7

Because they represent the same amount.





15. The error is $0.20 \neq \frac{2}{100}$ Because $\frac{2}{100}$ = 0.02 (not 0.20)

Answers of multiple choices questions

- 3. D

- - B . 5. B

В

- 7.
 - D 8. C

10. D

Exercise 10

- a. 1.2 1.
- b. 2.36
- c. 1.1

- **d**. 1.1
- e. 0.15
- f. 1.25

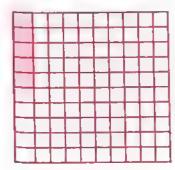
- a. 30 2.
- b. 9
- c. 500
- d. 8
- e. For example:
- 5 in the hundredths place is 0.05 and
- 5 in the tenths place is 0.5

$$0.05 = \frac{5}{100}$$
, $0.5 = \frac{5}{10}$

and we know that $\frac{5}{100} < \frac{5}{10}$

Also:

0.05 represented by



and 0.5 represented by



We notic that 0.05 < 0.5

- 3. a. 7.98
- **b.** 0.29
- c. 5.34

- d. 0.67
- e. 1.04
- **a.** 0.6 or $\frac{6}{10}$
- **b.** 0.05 or $\frac{5}{100}$

- d. Tenths
- e. Ones
- f. Hundredths
- **a.** 5.51 5.
- b. 2.07
- c. 7.09
- **d.** 5.82
- e. 9.43 f. 4.07
- g. 0.47
- a. Four and fifty-three hundredths. 6.
 - b. Forty-eight hundredths.
 - c. Seven and eight tenths.
 - d. Three and seventy-one hundredths.
 - e. Two and thirteen hundredths.
 - f. Four and two hundredths.
 - g. Seven and thirty-seven hundredths.
 - h. Two and nine hundredths.
- a. 4 + 0.7 + 0.03 b. 2 + 0.04
 - c. 2 + 0.50
- d. 1 + 0.1 + 0.08
- e. 5 + 0.6 + 0.08 f. 6 + 0.1 + 0.04

- 8. a. 4 Ones , 5 Tenths , 2 Hundredths
 - b. 8 Ones , 5 Tenths
 - c. 7 Ones 3 Tenths 4 Hundredths.
 - d. 1Tenths , 4 Hundredths
 - e. 6 Tenths , 9 Hundredths
 - f. 7 Ones , 6 Tenths , 1 Hundredths
- a. Three and twenty seven hundredths
 - -3 + 0.2 + 0.07
 - **b.** 4 + 0.2 + 0.07
 - 4 Ones 2 Tenths 7 Hundredths
 - c. decimal form → 5.45

 word form → five and forty
 five hundredths
- 10. a. Standard form: 2.19

Word form:

Two and nineteen hundredths

Unit form:

2 Ones ,1 Tenth ,9 Hundredths

Expanded form: 2 + 0.1 + 0.09

b. Standard form: 0.33

Word form:

Thirty-three hundredths

Unit form:

3 Tenths , 3 Hundredths

Expanded form: 0.3 + 0.03

c. Standard form: 4.58

Word form:

Four and fifty-eight hundredths

Unit form: 4 Ones, 5 Tenths

₂8 Hundredths

Expanded form: 4 + 0.5 + 0.08

d. Standard form: 4.10 = 4.1

Word form:

Four and one tenth

Unit form: 4 Ones, 1 Tenth

Expanded form: 4 + 0.1

e. Standard form: 1.03

Word form:

One and three hundredths

Unit form:

10ne 3 Hundredths

Expanded form: 1+0.03

- **11.** a. 0.7 b. 0.09 c. 22.35 d. 18.6 e. 5.68 f. 2.35
 - 1. 18.6 **e.** 5.68 f. 2.35
 - g. 5.05 h. 5.3 i. 60.8
 - j. 2.19 k. 0.9 l. 4.38
 - m. 6.66 n. 38.6 o. 0.4
 - **p.** 3.33

12. 2.68

Answers of multiple choice questions

- . C 2. B 3. B
- 4. B 5. A 6. B
- 7. D 8. B 9. C
- 10. C 11. C 12. D
- **13.** D **14.** B

Decimals and Fractions

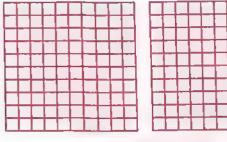
Exercise 11

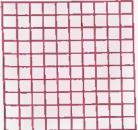
- **1.** a. $\frac{9}{10}$, 0.9 b. $\frac{6}{10}$, 0.6

 - **c.** $\frac{38}{100}$, 0.38 **d.** $\frac{65}{100}$, 0.65
 - e. $2\frac{47}{100}$, 2.47 f. $2\frac{3}{10}$, 2.3

2.

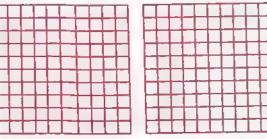




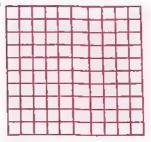


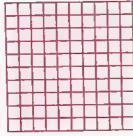
 $2\frac{93}{100}$

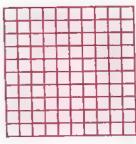
b.

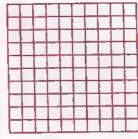


 $1\frac{32}{100} = 1\frac{8}{25}$



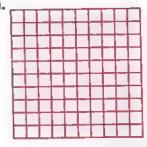


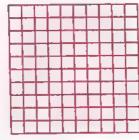


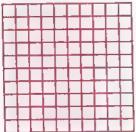


$$3\frac{4}{100} = 3\frac{1}{25}$$

d.







$$2\frac{74}{100} = 2\frac{37}{50}$$

- 3. a. $\frac{3}{10}$ b. $6\frac{28}{100}$ or $\frac{628}{100}$
 - **c.** $3\frac{27}{100}$ or $\frac{327}{100}$ **d.** $\frac{23}{100}$
 - **e.** $2\frac{20}{100}$ or $\frac{220}{100}$ **f.** $3\frac{4}{10}$ or $\frac{34}{10}$
 - **g.** $10\frac{5}{100}$ or $\frac{1005}{100}$ **h.** $\frac{2}{100} = \frac{1}{50}$
 - i. 67/100
 - **a**. 10
- **b.** 300
- **c.** 100
- **d.** 20
- e. 500
- f. 1000

- **5. a.** 30, $\frac{30}{10}$ **b.** 10, $\frac{10}{10}$
- - c. $40, \frac{40}{10}$ d. $15, \frac{15}{10}$
- - **e.** 23, $\frac{23}{10}$ **f.** 108, $\frac{108}{10}$
- **6. a.** $100, \frac{100}{100}$ **b.** $300, \frac{300}{100}$

 - **c.** $1900, \frac{1900}{100}$ **d.** $150, \frac{150}{100}$
 - e. $230, \frac{230}{100}$ f. $1080, \frac{1080}{100}$
 - g. $1320, \frac{1320}{100}$ h. $40, \frac{40}{100}$
- 7. a. 24
- **b.** 75
 - **c.** 520
- d. 374 e. 895 f. 19

- **g.** 143 **h.** $18\frac{5}{10}$ or $\frac{185}{10}$

- i. $\frac{34}{10}$ j. 19 k. $3\frac{7}{10}$

- l. 0.45 m. 19.8 n. 291
- o. $2\frac{5}{10}$ p. $1\frac{86}{100}$
- q. $\frac{157}{10}$ r. $\frac{2525}{100}$
- 8.
- 50.1 cm (501 tenths) cm
- - 38 students 38 hundredths

Answers of multiple choice questions

- 1.
 - A 2. B
- 4. B 5. A 6. B

3. C

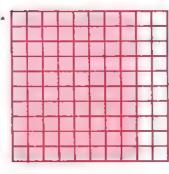
- 7.

- B 8. A 9. A
- 10. D 11. C 12. C

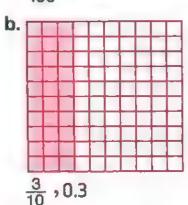
- **13.** D
- **14.** C

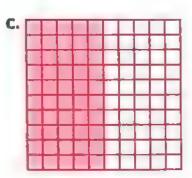
Exercise 12

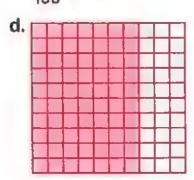
1.



$$\frac{80}{100}$$
, 0.80







$$\frac{7}{10} = \frac{70}{100}$$
, 0.7 = 0.70

Answers

- a. equivalent
 - b. not equivalent
 - c. not equivalent
 - d. not equivalent
 - e. not equivalent
 - f. equivalent
- 3. a. 0.80
- **b.** 0.70
- **c.** 0.9
- **d**. 0.20
- e. 0.50
- f. 0.1

- g. 0.4
- h. 0.60
- a. equivalent
 - b. not equivalent
 - c. equivalent
 - d. not equivalent
 - e. equivalent
 - f. not equivalent
- 5. a. $\frac{70}{100}$ b. $\frac{8}{10}$ c. $\frac{90}{100}$
- d. $\frac{40}{100}$ e. $\frac{1}{10}$ f. $\frac{2}{10}$
- g. $\frac{30}{100}$ h. $\frac{5}{10}$
- **6.** a. $\frac{10}{100}$, 0.10 b. $\frac{7}{10}$, 0.7

 - c. $\frac{60}{100}$, 0.60 d. $\frac{40}{100}$, 0.40

 - e. $\frac{3}{10}$, 0.3 f. $\frac{90}{100}$, 0.90

 - g. $\frac{100}{100}$, 1 h. $1\frac{40}{100}$, 1.40
 - i. $2\frac{10}{100}$, 2.10 j. $3\frac{3}{10}$, 3.3
 - 7. **a.** $\frac{5}{10} = \frac{50}{100}$ **b.** $\frac{20}{100} = \frac{2}{10}$

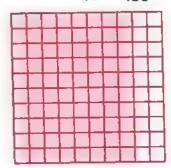
 - **c.** $\frac{4}{10} = \frac{40}{100}$ **d.** $(\frac{200}{100} = \frac{20}{10})$

- **e.** $\frac{70}{100} = \frac{7}{10}$ **f.** $(\frac{80}{10} = \frac{800}{100})$
- **g.** $\frac{3}{10} = \frac{30}{100}$ **h.** $\frac{60}{100} = \frac{6}{10}$
- i. $(\frac{70}{10} = \frac{700}{100})$ j. $(\frac{900}{100} = \frac{90}{10})$
- k. $\frac{8}{10} = \frac{80}{100}$ l. $\frac{10}{100} = \frac{1}{10}$

8.



$$0.8 = \frac{8}{10} = \frac{80}{100} = 0.80$$



$$0.80 = \frac{80}{100} = \frac{8}{10} = 0.8$$

Answers of multiple choice questions

- 1. A
- 2. B
- **3.** D

- 4. C 5. A 6. C
- 7. A 8. C 9. D
- **10.** D **11.** D
- **12.** D

Concept 3

Operations on Decimals

Exercise 13

1. a. 0.34 < 0.4

Ones	Decimal point	Tenths	Hundredths	
0	*	3	4	
0	•	4	0	

b. 0.45 > 0.04

Ones	Decimal point	Tenths	Hundredths
0	•	4	5
0		0	4

c. 0.23 < 0.3

Ones	Ones Decimal point		Hundredths	
0	,	2	3	
0	0 +		0	

d. 0.54 > 0.45

	Ones	Decimal point	Tenths	Hundredths	
,	0	•	5	4	
	0	•	4	5	

e. 0.62 > 0.26

	Ones	Decimal point	Tenths	Hundredths
5	0		6	2
	0	•	2	6

f. 0.80 > 0.09

Ones	Decimal point	Tenths	Hundredths	
0		8	0	
0		0	9	

g. 0.73 > 0.69

	Ones	nes Decimal point		Hundredths	
)	0	•	7	3	
	0	•	6	9	

h. 0.10 = 0.1

I	Ones	Decimal point	Tenths	Hundredths	
	0		1	0	
	0		1	0	

i. 0.49 > 0.04

Ones	Decimal point	Tenths	Hundredths	
0		4	9	
D	•	0	4	

j. 0.27 < 0.7

Ones	Decimal point	Tenths	Hundredths
0		2	7
0	•	7	0

- 2. a. > b. > c. >
 - d. = e. > f. >
 - g. < h. < i. <
 - j. > k. < l. >
 - m. > n. > o. >
 - p. < q. > r. >
- 3. a. < b. > c. >
 - d. > e. > f. >
 - g. < h. < i. >
 - j. > k. > l. <
 - m. = n. < o. <
 - p. <
 - 4. 3.52 , 3.3 , 3.9
- **5.** 2.1 , 0.7 , 2.03
- 6. Adam drank more , because 0.6 > 0.4
- 7. Hany walks the longer distance, because 0.44 < 0.6
- 8. The second bottle has more olive oil, because 0.73 > 0.5

9.

Fruit	Ones	Decimal Point	Tenths	Hundredths
Figs	1	•	3	0
Mangoes	2	•	0	1
Plums	1		2	1
Pomegranates	2	•	2	5

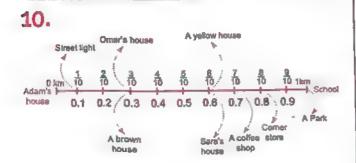


- a. Plums
- b. Pomegranates
- c. Figs , Mangoes and Pomegrantes
- d. Plums > Figs
- e. Pomegranates > Mangoes

(Answers may vary)

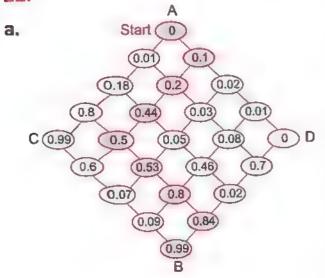
f. Plums < Figs

[Answers may vary]

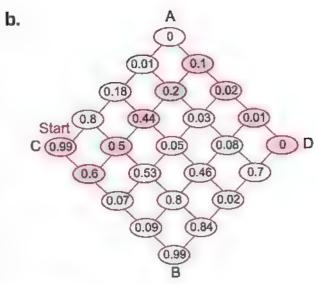


- a. Sara's house b. Coffee shop
- c. Omar
- d. Sara
- **e.** $\frac{2}{10}$ km

11.



[Answers may vary]



[Answers may vary]

Answers of multiple choice questions

- . C 2. A 3. B
- 4. B 5. C 6. D
- 7. A 8. D 9. A
- 10. B 11. A 12. B
- 13. C 14. A 15. B
- **16.** C

Exercise 14

- 1. a. 60
- **b**. 30
- **c.** 100

- d. 10
- e. 10
- f. 10

- g. 10
- h. 9
- 1.1
- 2. a. 3"by dividing by 10"
 - **b**. 100 "by multiplying by 10"
 - c. 20 "by multiplying by 10"
 - d. 9"by dividing by 10"
 - e. 5"by dividing by 10"

- f. 10 "by dividing by 10"
- q. 10 "by dividing by 10"
- h. 400 "by multiplying by 10"
- i. 10 "by dividing by 10"
- j. 80 "by multiplying by 10"
- a. 45 3.
- **b.** $\frac{93}{100}$
- c. $\frac{50}{100}$ or $\frac{5}{10}$
- d. 75
- **e.** $\frac{87}{100}$
- $f. \frac{12}{10} = 1 \frac{2}{10}$
- g. $2\frac{72}{100}$
- **h.** $1\frac{80}{100}$ or $1\frac{8}{10}$
- a. 60,83
- b. 6,13
- c. 30 , 38
- **d.** 90 $\frac{113}{100}$
- **e.** 50 , 82
- f. 60 , 142
- **a.** 52
- b. 44
- **c.** $\frac{100}{100} = 1$ **d.** $\frac{70}{100}$ or $\frac{7}{10}$
- $e. \frac{100}{100} = 1$
- **f.** $\frac{90}{100}$ or $\frac{9}{10}$
- g. $\frac{101}{100} = 1\frac{1}{100}$ h. $\frac{104}{100} = 1\frac{4}{100}$
- i. 6 35
- i. 0.63
- k. 0.89
- L. 0.76
- m. 1.26
- n. 16.47
- o. 11.42
- He have in all = $\frac{5}{10} + \frac{40}{100}$ $=\frac{50}{100}+\frac{40}{100}=\frac{90}{100}$ or $\frac{9}{10}$ lofjuice

- 7. Hosam walked = $\frac{5}{10} + \frac{21}{100}$ $=\frac{50}{100}+\frac{21}{100}=\frac{71}{100}$ kilometer
- 8. The total = $\frac{8}{10} + \frac{25}{100} = \frac{80}{100} + \frac{25}{100}$ $=\frac{105}{100}=1\frac{5}{100}$ meter
- She used = $1\frac{5}{10} + 1\frac{25}{100}$ $=1\frac{50}{100}+1\frac{25}{100}=2\frac{75}{100}$ kilogram
- **10.** What she had = $\frac{8}{10} + \frac{25}{100} = \frac{105}{100}$ $=1\frac{5}{100}$ meter
- **11.** What he has = $\frac{5}{10} + \frac{65}{100} = \frac{115}{100}$ $=1\frac{15}{100}>1$

Yes, he has more than 1 liter

12. The perimeter $= \left[\frac{3}{10} + \frac{3}{10} \right] + \left[\frac{12}{100} + \frac{12}{100} \right]$ $=\frac{6}{10}+\frac{24}{100}=\frac{84}{100}$ cm.

Answers of multiple choice questions

- 1. C 2. C
- C
- 4. B 5. B 6.
- В

- 7. D
- 8. A 9. C

12. B

10. B 11. A

Unit 10 Assessment

- a. A 1.
- b. B
- c. A

- d. B
- e. C
- f. A

g. C

Answers

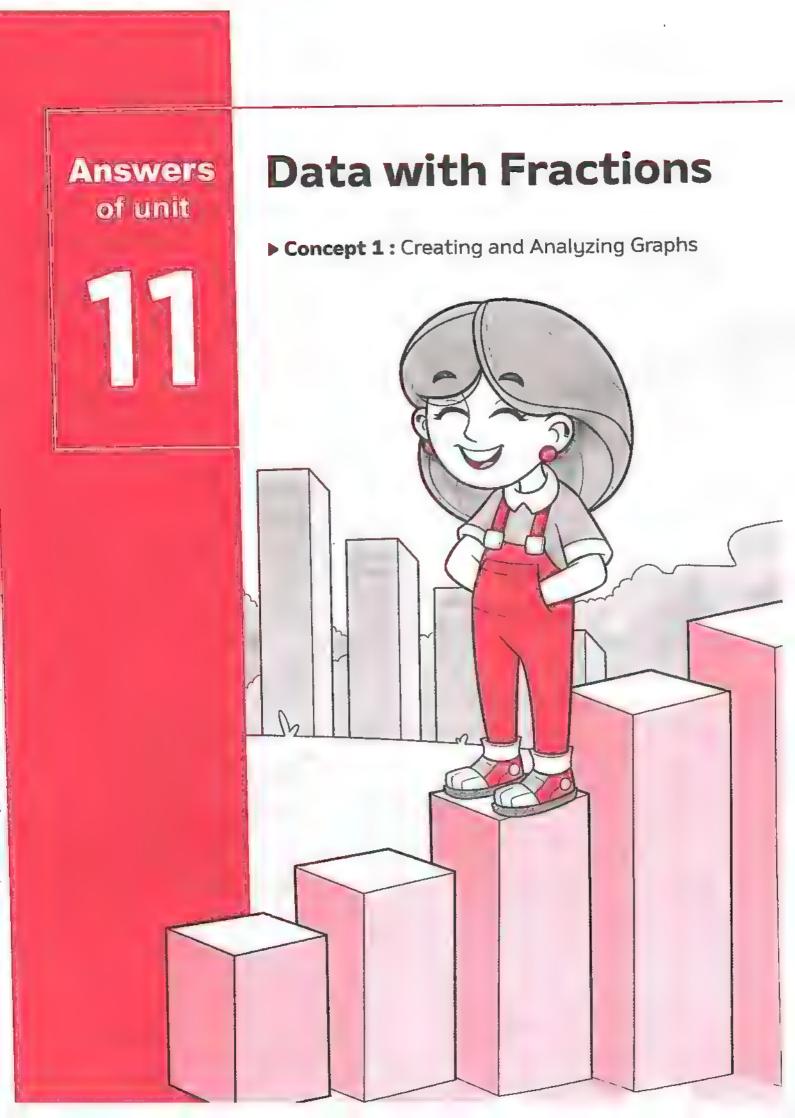
- **b.** 57
- c. three and sixteen hundredths.
- d. tenths e. 6.08
- f. 2170

- g. 3.7
- h. 50.3
- 3. a. D
- b. C
- c. B

- d. C
- e. B
- f. C

g. C

- 4. 1. Amira bought less , because 1.5 < 1.6
 - 2. Adam drank 0.6 liter Omar drank 0.4 liter 0.6 > 0.4 So, Omar drank more.
 - 3. Samy have in all = $\frac{5}{10} + \frac{35}{100}$ $=\frac{50}{100}+\frac{35}{100}=\frac{85}{100}$ liters
 - 4. Maha is wrong, word form seven and 3 hundredths



Concept 1

Creating and Analyzing Graphs

Exercise 15

1.

	Favorite activities				
Activity	Drawing	Crafts	Sports	Reading	Singing
Number of students	4	5	9	7	3

- a. Sports.
- b. Singing.
- c. 7 students. d. 9-5=4 students.
- e. Drawing and crafts.

2.

- a. Lion.
- b. Bear.
- c. 13 students. d. Elephant and giraffe.
- **e.** 13 4 = 9 students.

3.

- a. 90 pounds , April
- b. 80 pounds, February
- c. 80 + 50 = 130 pounds.
- **d.** 90 20 = 70 pounds.
- **e.** 40+50+70+90+50=300 pounds.
- f. 60 + 80 + 70 + 20 + 30 = 260 pounds.
- g. March.
- h. Hany saved the most, Enas saved the least.

4.

- a. Riyadh.
- **b.** 15 degrees.
- c. 20 5 = 15 degrees.
- **d.** 25 10 = 15 degrees.

5.

- a. Primary 2
- b. Primary 3

- c. 100 20 = 80 students
- **d.** 20 + 60 = 80 students
- **e.** [60 + 90] [90 + 50] = 150 140= 10 students
- f. 35 + 120 + 170 + 190 + 120= 635 students
- g. Because we compare among 5 grades and compare between two options.

[Answer may vary]

6.

- a. 12 boys
- b. 4 girls

7.

- **a.** 60 boys
- b. 60 girls
- c. Third grade

8.

- a. 8 boys
- b. 8 girls
- c. Basketball.

9.

- Table 1: Yes, because we compare between maximum and minimum temperature.
- Table 2: No, because it is not comparing between 2 items.
- Table 3: Yes, because it is a compare between boys and girls.

10.

- a. [1] bar graph
 - (2) double bar graph
 - [3] line plot

- b. 8 squares
- c. 5 children
- d. Saly
- e. 8
- f. Oct.

Answers of multiple choice questions

- 2. A
- 4. D 5. C 6. B
- 7. D 8. C
- 9. a. C b. D
- 10. C 11. C
- 12. A

- 13. B 14. D 15. C

Exercise

First Line plot

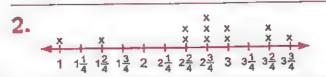
(Key) Each x = 1 child

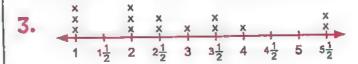
- 1. Weights of children in kg
- 2.11 $\frac{1}{2}$ kg
- 3.11, 11 $\frac{3}{4}$ and 12 $\frac{1}{4}$ kg



$$(Key)$$
 Each $x = 1$ tree

- 1. Heights of trees in meters
- 2.3 $\frac{1}{3}$ m 3.3 $\frac{2}{3}$ m







Ages of the nursey's kids

- a. 3 children b. 1 child
- c. 3+2+1+2=8 children
- d. 3-1=2 children
- e. 14 children
- Marks of Mathematics test



(Key) Each x = 1 student

- a. 24 students
- **b.** $16\frac{1}{2}$, 20
- c. 18 ½ marks
- d. 2+6+2+1+3=14 students
- e. 5-3=2 students
- f. Most of students got less than 19.

[Answer may vary]





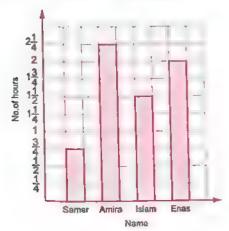
(Key) Each x = 1 student

- a. 11 students
- **b.** $\frac{1}{5}$ km
- **c.** $\frac{5}{5}$ km [1 km] **d.** $\frac{4}{5}$ km
- e. $\frac{1}{5}$ km and $\frac{3}{5}$ km
- f. Most of students live far from the school.

(Answer may vary)

Second Breaking the bar

6. Internet usage



- a. Amira
- b. Samer

c.
$$2 - \frac{3}{4} = 1 \frac{1}{4}$$
 hours

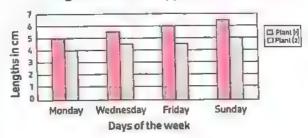
d.
$$2\frac{1}{4} + \frac{3}{4} = 3$$
 hours

e.
$$2 - 1\frac{1}{2} = \frac{1}{2}$$
 hour

7.

a.

Lengths of two types of plants

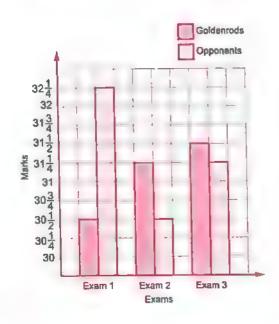


b.
$$6\frac{1}{5} - 5 = 1\frac{1}{5}$$
 cm

8.

The suitable type of graph is a double bar graph, because it compares two related sets of data.

Markes of the three exams

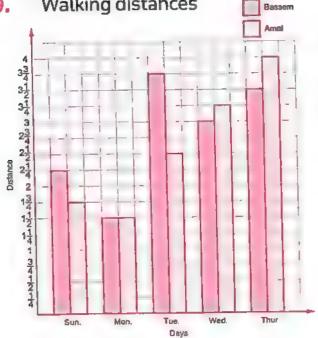


- a. Goldenrods
- **b.** Goldenrods

c.
$$31\frac{1}{2} - 30\frac{1}{2} = 1$$
 mark

d.
$$31\frac{1}{2} + 30\frac{1}{2} = 62$$
 marks

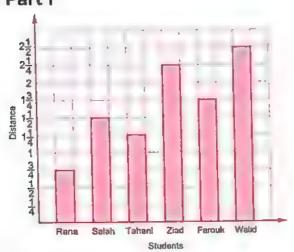
9. Walking distances



- a. Tuesday
- b. Monday
- c. Sunday
- **d.** $1\frac{3}{4}+1\frac{1}{2}+2\frac{1}{2}+3\frac{1}{4}+4=13$ kilometers
- e. $2\frac{1}{4} + 1\frac{1}{2} + 3\frac{3}{4} + 3 + 3\frac{1}{2} = 14$ kilometers
- f. Wednesday

10.

Part 1



Question 1:

Who rolled the farthest? Walid

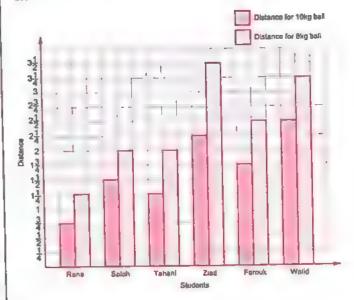
Question 2:

What is the difference between Ziad and Tahani? 1 m

(Answers may vary)

Part 2

a.



- b. Rana and Salah
- c. Ziad
- **d.** $3\frac{1}{2} + 2\frac{1}{2} = 6$ m
- e. They would roll the ball farther than the roll of the 8 kg ball.
- f. The total distance of Ziad and Farouk = $2\frac{1}{4} + 1\frac{3}{4} + 3\frac{1}{2} + 2\frac{1}{2} = 10 \text{ m}$ [Answer may vary]

Unit 11 Assessment

- 1. a. C
- b. C
- c. C

- d. C
- e. C
- f. B

g. A



2. First:

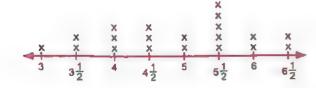
- **a.** $6\frac{1}{3}$
- b. double bar graph
- c. bar graph
- d. Double bar graph

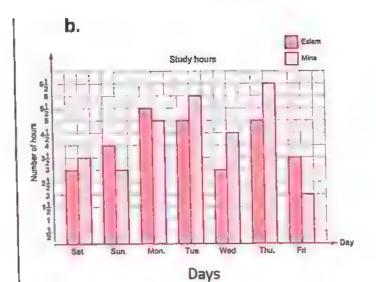
Second:

- a. Yasmin
- **b.** 20 10 = 10 marks.
- c. Jody.
- **d.** 18 + 16 = 34 marks
- 3. a. C
- b. B
- c. B

- d. D
- e. B
- f. C

- g. C
- 4. a.





- **c.** 1.15 + 30 + 20 = 65 girls
 - 2. 25 boys
 - 3. Pizza
 - 4.20 10 = 10 pupils

Pupils	Volley ball	Hand ball	Swimming	Foot ball
Boys	4	10	8	6
Girls	6	10	12	2

• Handball.

Answers of unit

12

Geometry

▶ Concept 1 : Geometric Concepts

► Concept 2 : Classifying Shapes



Concept 1

Geometric Concepts

Exercise 17

1.

a. a straight line

b. a ray

c. a line segment

d. The ray

e. the straight line

f. the line segment

2.

EF, EG, FG, FE, GE or GF

3.

a. Ray BC, BC

b. Line BC, BC

c. Ray YZ, YZ

d. Line segment YZ, YZ

e. Line YZ, YZ

f. Line segment BC, BC

Answer by yourself. 4.

5.

a. • F

c. X e. A

f. ←

g. 🚡 C

б.

A line is a straight path of points that goes on forever in two directions. It has no enclopints.

A ray is a part of a line. It has one endpoint and extends forever in only one direction.

A line segment is a part of a line. It has two endpoints.

7.

• If you extend a line segment in one direction, you will create a ray.

 If you extend a line segment in both directions, you will create a line.

8.

a. Intersecting

b. Perpendicular

c. Intersecting

d. Parallel

9.

a. Intersecting

b. Parallel

c. Intersecting

d. Intersecting

e. Parallel

f. Intersecting

10.

a. AW and ZE or AZ and WE

b. ZA and AW or ZA and ZF

or FW and AW or FW and ZF

11.

a. parallel

b. perpendicular

c. 4

d. parallel

e. intersecting

12.

a. CD

b. AD

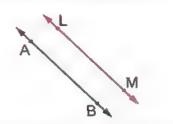
c. BC

d. E

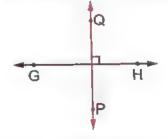
- a. C
- b. B
- c. D

- d. B
- e. A

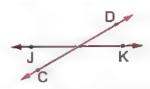
14.



15.



16.



- 17. Answer by yourself.
- 18. Answer by yourself.
- 19. Answer by yourself.
- 20. a. False
- b. True
- c. True

[Explain by yourself]

Answers of multiple choice questions

- D

- 4.
- 5.
- 6. A

7.

B

- 8.

C

9. A

10. B

Exercise 18

1.

- a. no
- b. yes
- c. yes
- d. yes

- e. yes
- f. yes

j. yes

- g. no
- h. yes

- i. yes
- 2.
- b. yes
- c. yes
- d. yes

e. yes

a. yes

- f. no
- g. no
- h. no

- i. no
- j. yes
- k. yes
- L, yes

- m. yes
 - n. yes
- o. yes
- p. no

3.

4.







d.











[Some answers may vary]



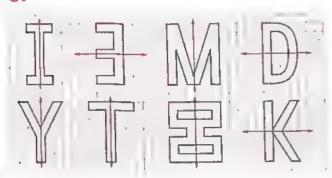






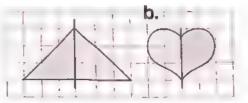


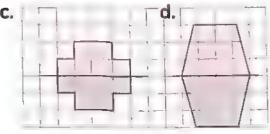




7.

a.





- 8. Answer by yourself.
- 9. Answer by yourself.

10.

- a. Color by yourself.
- b. Quadrilateral or Rectangle.
- c. Color by yourself.
- d. 10.
- e. Color by yourself.
- f. Garden pentagon , Gazebo octagon , Statue / Football field / Restrooms / Playground / Benches / Park - quadrilaterals.
- **g.** Perimeter = $2 \times (120 + 80) = 400 \text{ m}$ $_{9}$ area = 120 \times 80 = 9,600 m²
- h. Draw by yourself.
- Draw by yourself. 11.

Answers of multiple choice questions

- 1. D
- 2. B
- В 4.
- 5.
- 3. C 6. C

7. D

Classifying Shapes

Exercise 19

1.

a.



b.







e.





g.





2.





b.



C,





3.

a.



b.



d.



e.



f.



h,



i.



j.



4.

b.



f.







Answer by yourself.

6.

- a. Smaller than; Acute.
- b. Larger than; Obtuse.
- c. Smaller than; Acute.
- d. Larger than; Obtuse.
- e. Equal to; Right.
- f. Smaller than; Acute.

7.

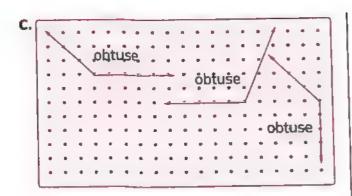
- a. an acute.
- b. a right.
- c. an obtuse.
- d. acute.
- e. obtuse.
- f. 2

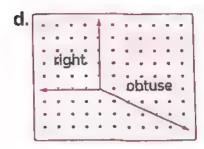
8.

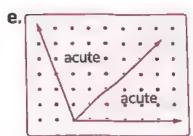






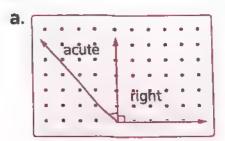


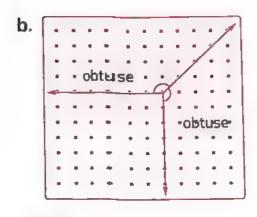


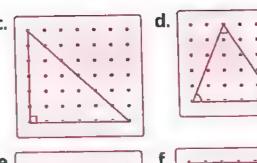


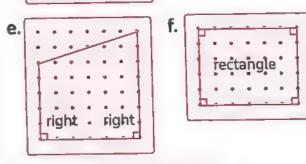
[Answers may vary]

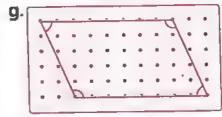
9.

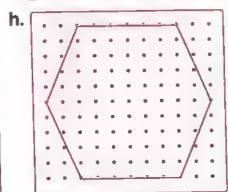












[Answers may vary]

- 10. Answer by yourself.
- 11. Answer by yourself.
- 12. Answer by yourself.

Answers of multiple choice questions

- 2. A 3.
- 5. Α Α
 - 6. C 9. 8.

B

10. A



- 1.
- 2.
- 3. d. b.
- 4. a. Isosceles
- b. Isosceles
- c. Scalene
- d. Equilateral
- e. Equilateral
- f. Scalene
- g. Isosceles
- h. Scalene

- 5.
- a. Acute
- b. Acute
- c. Right
- d. Obtuse
- e. Obtuse
- f. Right
- q. Obtuse
- h. Right

- a. Isosceles and Obtuse.
- b. Isosceles and Right.
- c. Equilateral and Acute.
- d. Isosceles and Right.
- e. Isosceles and Acute.
- f. Scalene and Obtuse.
- q. Isosceles and Acute.
- h. Isosceles and Acute.

7.

- a. Equilateral
- b. Scalene
- c. Equilateral
- d. Isosceles
- e. Equilateral
- f. isosceles

8.

- a. Right
- b. Acute
- c. Acute
- d. Obtuse
- e. Acute
- f. Right

9.

a.



not equilateral and right triangle

b.



not right triangle and isosceles

C.



equilateral triangle

d.



right triangle [Answers may vary]

Color by yourself. 10.



- a. Isosceles triangle.
- b. Obtuse triangle.
- c. Equilateral triangle.
- d. Scalene triangle.
- e. Right triangle. f. Acute triangle.
- g. Isosceles and Acute triangle.
- h. Scalene and Obtuse triangle.

12.

- a. False
- h. False
- c. False

- d. True
- e. True
- f. False

- g. False
- h. True
- i. False

i. False

13.

- a. scalene b. equal
- c. isosceles
- d. isosceles
- e. equilateral
- f. scalene triangle
- g. 4

h. a right

- i. 2
- j. a right triangle
- k, an obtuse triangle
- L. an acute triangle

14.

a.



b.





d.



e.



f.



g.



[Answers may vary]

- 15. No. because the triangle with three equal sides is an acute triangle.
- 16. Yes, because each of them can be isosceles triangle.
- 17. Disagree. A right triangle may be Scalene or isosceles.



18. Answer by yourself.

Answers of multiple choice questions

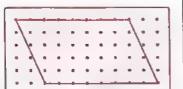
- 3. C C 2.
- 5. В 6. \mathbf{G} В 4.
- 9. В A C 7.
- **12.** C **11.** A 10. C
- 14. C 13. C

Exercise 21

- 1.
- a. Rectangle
- **b.** Trapezium
- c. Parallelogram
- d. Rhombus
- e. Quadrilateral
- f. Square
- g. Trapezium
- h. Parallelogram

a.

Name: Parallelogram



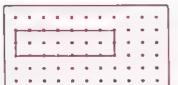
Parallel Sides:

2 pairs of parallel sides

 Angles: 2 acute angles and 2 obtuse angles

b.

Name: Rectangle



· Parallel Sides:

2 pairs of parallel sides

Angles: 4 right angles

C.

Name: Rhombus



Parallel Sides:

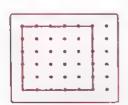
2 pairs of parallel sides

• Angles: 2 acute angles and 2 obtuse angles

d.

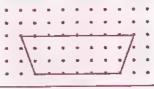
Name: Square

 Parallel Sides: 2 pairs of parallel sides



• Angles: 4 right angles

Name: Trapezium



 Parallel Sides: One pair of parallel sides

Angles: angles vary

3.

a. 4

b. 4

c. trapezium

d. square

q. sides

e. square

h. rhombus

4.

a. True

b. False

c. True

f. 4

d. False

e. True

f. False

g. True

h. True

i. True

i. False

5.

a. Rhombus

b. Trapezium

c. Square

d. Answer by yourself.

6.

a.





quadrilateral

C.

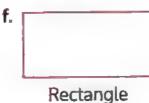


d.



e.







g.



h.



Square

Rhombus

7. Answer by yourself.

Answers of multiple choice questions

1. B

2.

C

3. D

4. C

5. D

D A

В

6. B 9. A

7. A
 10. B

8. 11. 9.

12. C

Unit 12 Assessment

1.

1. A

2. C

3. C

4. D

5. C

6. B

7. B

2.

1. Ray A B or A B

2. 2

3. 2

4. parallel

5. Angle

6. acute

7. isosceles

8. 4

3.

1. D

2. C

3. D

4. C

5. C

6. A

7. D

4.

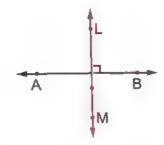
1. Square.

.

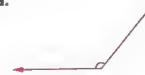
2. a. an acute triangle.

b. 18

3.



4. a.



b.



Angles of a Circle Answers of unit ▶ Concept 1 : Breaking the Circle into Angles ▶ Concept 2 : Measuring and Drawing Angles

Concept

Breaking the Circle into Angles

Exercise 22

- a. Acute angle. 1.
 - b. Acute angle.
 - c. Obtuse angle.
 - d. Straight angle.
 - e. Acute angle.
 - f. Right angle.
 - g. Straight angle.
 - h. Obtuse angle.
- 2. a. Acute angle.
 - b. Obtuse angle.
 - c. Right angle.
 - d. Acute angle.
 - e. Straight angle.
 - f. Acute angle.
 - g. Obtuse angle.
 - h. Obtuse angle.
 - i. Acute angle.
 - j. Obtuse angle.
 - k. Obtuse angle.
 - l. Acute angle.
- 3. a. 0,90

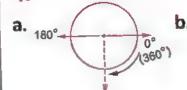
 - c. 90

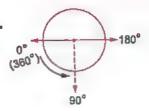
 - e. 180

 - q. a right
 - i. an acute
 - k, an acute
 - m. 360
 - o. 90

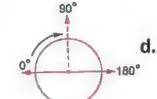
- b. 90 180
- d. 90
- f. An acute angle
- h. an acute
- i. an obtuse
- L an obtuse
- n. 180

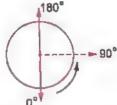
4.



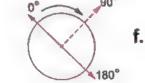


¢.



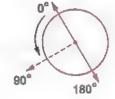


e.

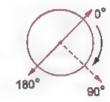




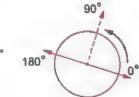
g.

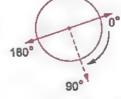


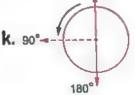
h.

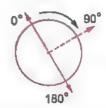


i.



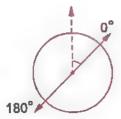




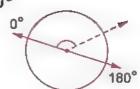


5.

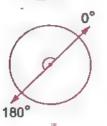
a. 0°,90°



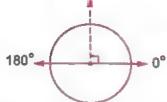


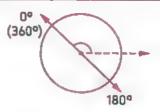


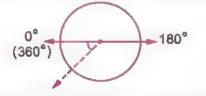
c. 180°



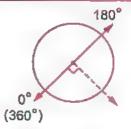
d. 90°







8.



Answers of multiple choice questions

- 2. C 3. A
- 4. A

- **5.** D **6.** B

- 9. A

- 7. A 8. A 10. B 11. C 12. A 15. B
- **13.** C **14.** A **15.** B

Exercise 23

- **c.** → 4 **d.** → 2
- **2. a.** 30° **b.** 180° **c.** 60°

- d. 150° e. 120° f. 90°
- g. 330° h. 270°
- 3. **a.** $\frac{1}{12}$, 30° **b.** $\frac{5}{12}$, 150°

c.
$$\frac{3}{12} = \frac{1}{4}$$
, 90°

d.
$$\frac{6}{12} = \frac{1}{2}$$
, 180°

$$e. \frac{4}{12} = \frac{1}{3}$$
 , 120°

$$f. \frac{2}{12} = \frac{1}{6}$$
 , 60°

4.

a. 60°







b. 90°

d. 30°



e. 150°



f. 180°





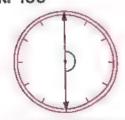
g. 330°



i. 240°



k. 180°



h. 120°



j. 300°



L 90°

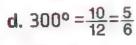


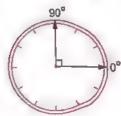
5. a.
$$60^{\circ} = \frac{2}{12} = \frac{1}{6}$$

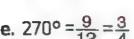
b.
$$210^{\circ} = \frac{7}{12}$$



c.
$$90^{\circ} = \frac{3}{12} = \frac{1}{4}$$







270°

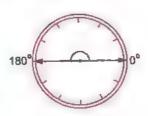


e.
$$270^{\circ} = \frac{9}{12} = \frac{3}{4}$$
 f. $150^{\circ} = \frac{5}{12}$

g.
$$360^{\circ} = \frac{12}{12}$$

g.
$$360^{\circ} = \frac{12}{12} = 1$$
 h. $180^{\circ} = \frac{6}{12} = \frac{1}{2}$





6.	a.	90°
----	----	-----

Answers of multiple choice questions

Concept 2

Measuring and Drawing Angles

Exercise 24

- 1. a. Acute ,60° b. Obtuse ,145°
 - c. Acute ,75° d. Straight ,180°
 - e. Acute, 25° f. Obtuse, 140°
 - g. Right , 90° h. Obtuse , 115°
- a. ∠ABC , ∠CBA , ∠B ,
 measure = 25°
 - b. ∠JKL,∠LKJ,∠K, measure = 90°
 - c. $\angle PQR \cdot \angle RQP \cdot \angle Q \cdot$ measure = 130°
 - d. $\angle DEF_{\rightarrow} \angle FED_{\rightarrow} \angle E_{\rightarrow}$ measure = 60°
 - e. \angle STU , \angle UTS , \angle T , measure = 155°
 - f. \angle ONM $_{2}\angle$ MNO $_{3}\angle$ N $_{4}$ measure = 25°
- 3. a. 45°
- **b.** 120°
- c. 30°

- d. 10°
- e. 150°
- f. 95°
- **4.** a. Names : ∠ HIJ , ∠ JIH , ∠ I

Vertex:1

sides: TH , TJ

Measure: 30°

b. Names: ∠ZYX, ∠XYZ, ∠Y

Vertex: Y

sides: YX, YZ

Measure: 90°

c. Names: ∠POQ, ∠QOP, ∠O

Vertex: 0

sides: $\overrightarrow{OQ}, \overrightarrow{OP}$

Measure: 180°

d. Names:∠LMN ¬∠NML ¬∠M

Vertex: M

sides: MN , ML

Measure: 125°

e. Names:∠ABC,∠CBA,∠B

Vertex: B

sides: BA, BC

Measure: 35°

f. Names:∠VTU,∠UTV,∠T

Vertex:T

sides: TU, TV

Measure: 160°

- 5. a. B
- b. $\overrightarrow{YX}, \overrightarrow{YZ}$
- c. ∠CBA or ∠ABC or ∠B
- d. ∠BAC or ∠CAB or ∠A
- e. ∠KLM or ∠MLK or ∠L
- f. a protractor
- 6. 1. (a) ∠ ABC or ∠ CBA or ∠ B

(b) an acute angle

[c] 50

- **2.** [a] 120
- (b) an obtuse



- 3. (a) ∠ ABC or ∠ CBA or ∠ B
 - (b) an acute angle
- 4. (a) ∠ DEF or ∠ FED or ∠ E
- (b) an acute angle
- (c)60
- 5 (a) ∠ ABC or ∠ CBA or ∠ B
 - (b) a right angle
 - (c) 90
- Rami's measurement does not make sense.

The angle is an obtuse angle. So the measurement must by over 90°

Answers of multiple choice questions

- 1. B
- 2. (
- **3.** B

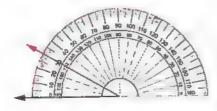
- 4. D
- 5.
- 6. A

- 7. C
- 8. E
- 9. D

10. C

Exercise 25

- 1. 1. → d 2. → a 3. → c
- 2.
- a. 30°



b. 128°



c. 95°



d. 72°



e. 144°



f. 165°



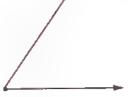
- 3.
- **a.** 20°

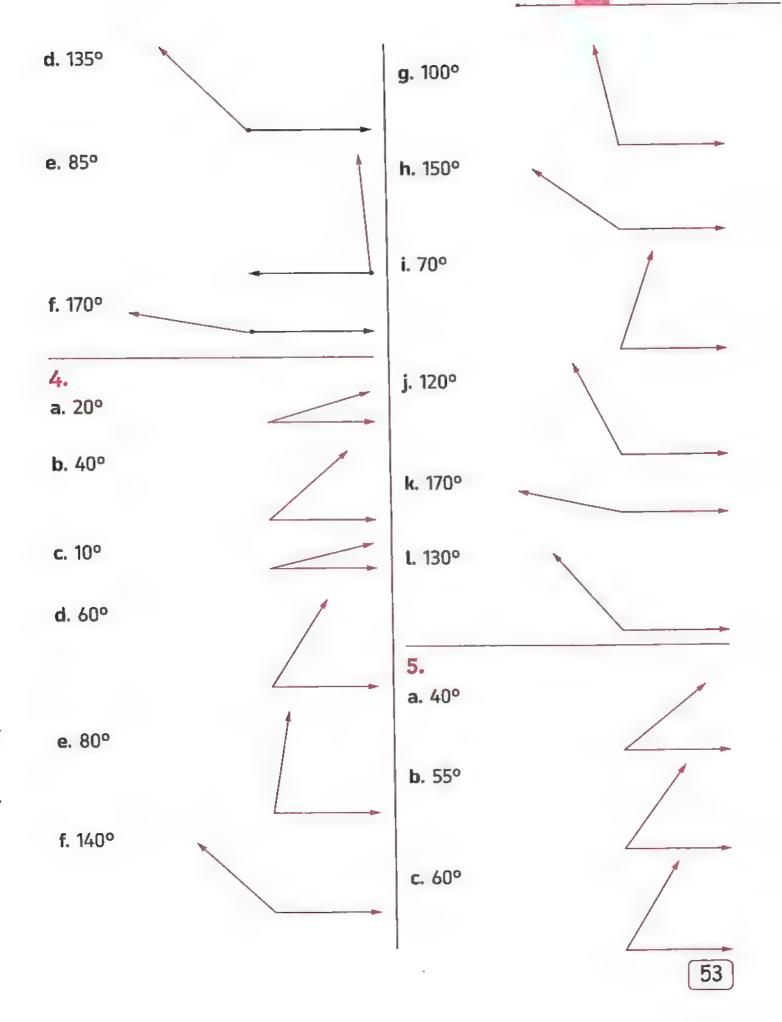


b. 105°



c. 55°







e. 90°

f. 145°

g. 110°

h. 120°

i. 100°

j. 165°

k. 105°

L. 70°



7.

a. 58°



c. 94°

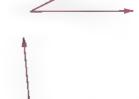
d. 148°

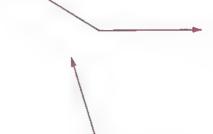
e. 106°

g. 122°

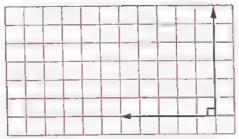
f. 172°

h. 78°

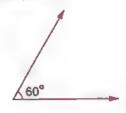




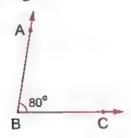
a. a right angle



b. an acute angle



c. an acute angle



Answer by yourself. 9.

10.

a. 54°



b. 43°



Name the place by yourself

11. a. a scalene triangle

b. an isosceles triangle

c. an equilateral triangle

d. an equilateral triangle

e. a scalene triangle

f. an isosceles triangle

12. a. an obtuse triangle

b. a right triangle

c. an acute triangle

d. a right triangle

e. an acute triangle

f. an acute triangle

13. a. 1. a scalene triangle

2. a right triangle

b. 1. a scalene triangle

2. an obtuse triangle

c. 1. an isosceles triangle

2. an acute triangle

d. 1. a scalene triangle

2. an obtuse triangle

e. 1. a scalene triangle

2. a right triangle

f. 1. an equilateral triangle

2. an acute triangle

Answers of multiple choice questions

В

Unit 13 Assessment

1. 1. D

2. B

3. B

4. D

5. A

6. A

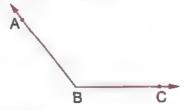
7. D



- 2. 1. AC, AB
- 2. 90° ,180°
- 3. 90°
- 4. ∠STU,∠UTS,∠T
- 5. 20°
- **6.** 30°
- 7. 90°
- 8. 360°
- **3. 1.** B
- 2. C
- 3. A

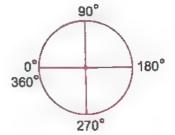
- 4. A
- **5**. C
- 6. C

- **7.** B
- 4. 1. Obtuse angle

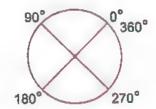


- 2. a. 40°, acute angle
 - b. 110°, obtuse angle
 - c. 90°, right angle

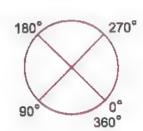
- 3. a. a scalene triangle
 - an acute triangle
 - b. an isosceles triangle
 - an obtuse triangle
- 4. a.



b.



C.



Answers of Step by Step Revision



Answers of

Cumulative Assessments

Unit 9

Cumulative Assessment



1. a. C

b. D

c. B

d. B

- 2.
- a. $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ $\frac{3}{4} = \frac{1}{4} + \frac{2}{4}$
- **b.** $\frac{4}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{4}{5} = \frac{1}{5} + \frac{3}{5}$

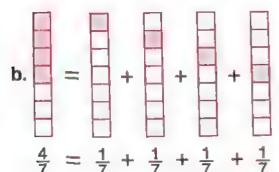
3. a. $\frac{1}{5}$

b. $\frac{3}{7}$

c. 3

d. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ f. $\frac{3}{4}$

e. $\frac{3}{6}$



Cumulative Assessment



- 1. a. $1\frac{2}{3}$ b. $\frac{21}{5}$
- c. $\frac{1}{8}$

- $d.\frac{6}{7}$
- e. 10
- f. 9

- a. C 2.
- b. A
- c. D

- d. C
- e. C
- f. C

- Improper fraction: $\frac{11}{8}$ Mixed number: $1\frac{3}{8}$
- 4. a. $\frac{47}{8}$ b. $\frac{23}{7}$ c. $\frac{23}{9}$
- 5. a. $2\frac{1}{3}$ b. $3\frac{3}{5}$ c. $6\frac{3}{4}$

Cumulative Assessment

- 1. a. $4\frac{4}{7}$
 - **b.** 8
- c. $\frac{1}{6}$

- d. 7
- e. 4 f. 14
- 2. a. B
- **b.** C **c.** B

- d. D
- 3. a. $7\frac{5}{5} = 8$ b. $2\frac{2}{7}$ c. $1\frac{3}{4}$
- **d.** $3\frac{10}{8} = 4\frac{2}{8}$ **e.** $\frac{3}{9}$ **f.** $2\frac{5}{5} = 3$
- 4. The left = $5\frac{3}{4} 3\frac{1}{4} = 2\frac{2}{4}$ cakes.



- 1. a. C
- b. C
- c. B

- d. D e. A
- 2. a. $4\frac{2}{3}$ b. $3\frac{3}{5}$ c. $1\frac{1}{5}$

- d. $\frac{6}{7}$ e. 7 f. 15
- h. $\frac{4}{7}$ i. $\frac{2}{5}$
- j. 1<u>4</u>
- 3. a. $3\frac{7}{5} = 4\frac{2}{5}$ b. $3\frac{1}{7}$

 - c. $\frac{9}{9} = 1$
- 4. a. $\frac{1}{10}$, $\frac{3}{10}$, $\frac{6}{10}$, $\frac{7}{10}$, $\frac{9}{10}$
 - $\mathbf{b}, \frac{11}{3}, \frac{11}{4}, \frac{11}{5}, \frac{11}{7}, \frac{11}{8}$

Cumulative Assessment



- 1. a. D
- b. C
- c. A

- d. C
- e. A
- 2. a. 4
- **b**, 16
- c. 6

- 3. a. $\frac{1}{4}$
- b. $\frac{4}{7}$ c. $\frac{13}{5}$

- **d**. 2
- **e.** $1\frac{1}{3}$ **f.** $\frac{1}{10}$

- g. 5
- h. less

Sara



,Adel



 $1\frac{1}{2}$ =

So, they ate the same amount.

Cumulative Assessment



- a. C 1.
- b. B
- c. A

- d. B
- e. C
- f. D

- g. C
- 2. a. $6\frac{7}{9}$ b. $2\frac{2}{5}$ c. $1\frac{2}{4}$
- d. $2\frac{1}{4}$ e. $7\frac{6}{7}$ f. $\frac{5}{7}$

- 3. $\frac{1}{10}$ $\frac{3}{10}$ $\frac{6}{10}$ $\frac{9}{10}$
 - **a.** closest to $\frac{1}{2}$ **b.** closest to 1
 - c. closest to 0
- **d.** closest to $\frac{1}{2}$

4. a. $\frac{1}{7}$, $\frac{5}{6}$, $\frac{8}{8}$

b.
$$\frac{7}{7}$$
, $\frac{5}{6}$, $\frac{5}{10}$, $\frac{1}{9}$

Cumulative Assessment



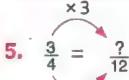
- a. A 1.
- b. A
- d. C
- e. C
- 2. a. $\frac{4}{6} = \frac{6}{9} = \frac{8}{12}$ b. $\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$

 - **c.** $\frac{3}{9} = \frac{1}{3} = \frac{2}{6}$ **d.** $\frac{8}{14} = \frac{12}{21} = \frac{16}{28}$
 - e. $\frac{2}{10} = \frac{3}{15} = \frac{4}{20}$ f. $\frac{6}{10} = \frac{3}{5} = \frac{9}{15}$

[Answers may vary]

- 3. a. $8\frac{3}{5}$ b. $6\frac{1}{5}$ c. 15

- d. 5
- **e.** 5 **f.** $\frac{6}{7}$
- 4. The order is: $\frac{3}{8}$, $\frac{5}{10}$, $\frac{7}{9}$



 $\frac{3}{4} = \frac{9}{12}$

There are 9 chocolate cakes.

Cumulative Assessment



- 1. a. $4\frac{4}{8}$
- **b**. $\frac{17}{5}$

- e. $\frac{4}{14} = \frac{6}{21} = \frac{8}{28}$ f. $\frac{6}{7}$
- 2. a. A b. B
- c. B
- d. D

3. a. $1-\frac{2}{8}=\frac{6}{8}$



- **b.** $2 \frac{2}{3} = 1\frac{1}{3} \times \times$







- 5. a. $2 \times \frac{1}{4}$ b. $6 \times \frac{1}{5}$

 - **c.** $3 \times \frac{1}{9}$ **d.** $4 \times \frac{1}{10}$
- 6. 6

Unit 10

Cumulative Assessment



- 1. a. C
- b. D
- c. A

- d. B
- e. C
- 2. a. $5\frac{2}{8}$ b. $4\frac{3}{5}$ c. $2\frac{2}{4}$

- d. 9
- **e.** 0.07
- f. 0.3
- **a.** 0.08 **b.** 0.5 **c.** 0.15 3.

- d. 0.35
- e. 0.01 f. 0.7

- 4. a. $\frac{8}{10}$
- **b.** $\frac{9}{100}$ **c.** $\frac{18}{100}$
- **d.** $\frac{74}{100}$ **e.** $\frac{4}{10}$ **f.** $\frac{31}{100}$

Cumulative Assessment



- a. 0.4 > Tenths
 - b. 0.03, Hundredths
 - c. 1, Ones
 - d. 200 , Hundreds

- Seven and eighteen hundredths.
 - b. One and seventy-three hundredths.
 - c. Six and two hundredths.
- **a.** 5.62
- **b.** 7.08
- c. 4.74

- a. D
- b. A
- c. A

- d. C
- e. D
- 5. a. $1\frac{7}{9}$
- b. $1\frac{1}{3}$
- c. $5\frac{7}{5} = 6\frac{2}{5}$ d. $5\frac{3}{7}$

Cumulative Assessment



- 1. a. C
- b. B
- c. A

- d. C
- e. A
- f. B
- **2. a.** $1\frac{7}{10}$ **b.** $5\frac{24}{100}$ **c.** $11\frac{87}{100}$

- d. $2\frac{5}{100}$ e. $14\frac{9}{10}$ f. $20\frac{23}{100}$

- a. 20
- **b.** 370
- c. 1,040

- d. 7.9
- e. 4.20 f. 735
- The order is: $\frac{5}{15}$, $\frac{5}{12}$, $\frac{5}{11}$, $\frac{5}{10}$, $\frac{5}{7}$
- 5. a. 70.2 cm b. 702 Tenths



- 1. a. A
- **b.** D **c.** A
- d. C e. D

- 2. a. $\frac{8}{9}$
- b. 219

- c. 9
- **d.** $1\frac{2}{3}$ **e.** $6\frac{6}{9}$

d. $2\frac{2}{4}$ **e.** $\frac{30}{100}$

- f. 9.87
- g. Hundredths

- g. $\frac{1}{7}$ h. $\frac{5}{9}$ i. 2.22

C. 48

f. 1.7

- j. 0.03 k. 2.9 l. $3\frac{2}{5}$
- 3. a. 3+0.7+0.09
 - **b.** 6 + 0.04
 - c.4 + 0.8 + 0.09
- 4. a. $\frac{40}{100}$ b. $\frac{7}{10}$ c. $\frac{50}{100}$

- d. $\frac{9}{10}$ e. $\frac{80}{100}$ f. $\frac{1}{10}$

Cumulative Assessment



- 1. a. 22
- **b.** $3\frac{3}{11}$ **c.** $3\frac{7}{10}$
- d. $\frac{4}{5}$ e. 3.22 f. 0.7

- 2. a. B
- **b.** C **c.** B

- d. C
- e. B f. D
- 3. $18\frac{4}{6}$ cm
- 4. Nermine

Cumulative Assessment



- **1. a.** $5\frac{71}{100}$ **b.** $2\frac{91}{100}$ **c.** $9\frac{4}{5}$

- **d.** $\frac{126}{100} = 1\frac{26}{100}$ **e.** $\frac{3}{5}$

- f. $10\frac{5}{7}$
- 2. a. 4
 - b. Seven and twenty-seven hundredths

- 3. a. B
- **b**. D
- c. B

- d. A
- e, B
- f. B
- 4. $\frac{105}{100}$ meters = $1\frac{5}{100}$ meters

Unit 11

- a. D
- b. B
- c. A

- d. B
- e. C
- a. 25 2.
- **b.** $\frac{2}{7}$
- c. 60

- d. $\frac{7}{8}$ e. $5\frac{4}{5}$
- f. Hundredths
- g. 0.14

- h. $\frac{23}{4}$
- 3. a. 14
- **b.** 16
- c. Mango
- d. Orange e. Watermelon
- f. 23
- g. 6
- 4. a. 4

- a. 4 b. $\frac{1}{5}$ c. $\frac{5}{7}$ d. $\frac{4}{7}$ e. $\frac{6}{9}$ f. $2\frac{2}{8}$
- 5. a. $\frac{2}{9}$, $\frac{4}{9}$, $\frac{5}{9}$, $\frac{6}{9}$, $\frac{7}{9}$
 - **b.** $\frac{3}{11}$, $\frac{3}{10}$, $\frac{3}{8}$, $\frac{3}{7}$, $\frac{3}{5}$

Cumulative Assessment

- a. C
- b. B
- c. C

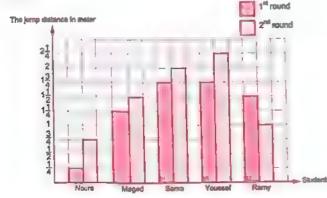
- d. B
- e. C
- f.C

- a. 12 2.
- **b.** $\frac{74}{100}$
- c. 7
- d. $\frac{3}{8}$ e. 9
- $f.3\frac{4}{5}$
- **g.** 0.38 **h.** 0.06 **i.** $\frac{23}{4}$

- 3. a. 1
- **b.** $3\frac{4}{5}$ **c.** $\frac{2}{4}$

- d. $6\frac{5}{7}$
- 4. a. $\frac{6}{7}$, $\frac{5}{7}$, $\frac{3}{7}$, $\frac{2}{7}$, $\frac{1}{7}$
 - b. $\frac{2}{3}$, $\frac{2}{5}$, $\frac{2}{6}$, $\frac{2}{7}$, $\frac{2}{10}$

5.



- a. Sama and Youssef b. Youssef

c. Ramy

 $d.\frac{1}{2}$ meter

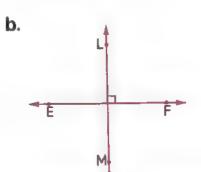
Unit 12

Cumulative Assessment

- a. D
- b. B
- c. A

- d. B
- e. C
- f. D

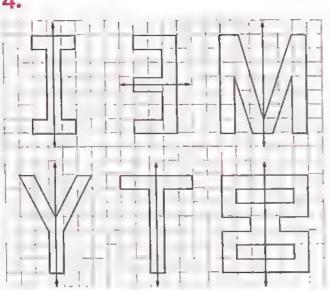
- a. ray 2.
- b. perpendicular
- **c.** $\frac{7}{9}$ **d.** $\frac{51}{100}$ **e.** 45
- 3. a. BC and AD
 - b. BC and AB
 - c. AC and AD [Answer may vary]
- 4.



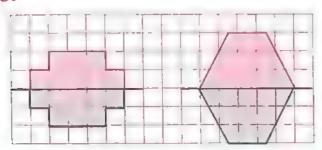
- a. C 1.
- b. C
- c. D
- d. B e. C
- f. B

- **a.** $\frac{3}{5}$ 2.
- **b.** $4\frac{5}{7}$
- d. $\frac{14}{5}$
- e. Hundredths
- f. Thirty and three hundredths
- 3. a. $10\frac{3}{5}$ b. $1\frac{3}{5}$

 - c. $2\frac{1}{9}$ d. $8\frac{5}{10}$



5.



Cumulative Assessment



- 1. a. acute
- **b**. obtuse
- c. line segment
- **d**. parallel
- **e**. $\frac{3}{7}$
- f. $\frac{15}{7}$
- 2. a. B
- b. B
- c. A

- d. C
- e. B
- f. D

- 3. **a.** $3\frac{3}{5}$
- **b.** $2\frac{4}{13}$
- **c.** $\frac{5}{9}$
- **d**. $\frac{3}{5}$

4.

a. . . / . . .

d.

5.



Cumulative Assessment

20

- 1. a. Isosceles ; acute triangle
 - b. Isosceles; acute triangle
 - c. Scalene ; obtuse triangle
 - d. Equilateral; acute triangle
 - e. Isosceles ; obtuse triangle



- f. Isosceles; right triangle
- g. Scalene; acute triangle
- h. Scalene; right triangle
- 2. a. C
- b. C
- c. A

- d. D
- e. A
- f. C

- g. C
- 3. a. equilateral
 - b. scalene
 - **c.** 0.7
- d. $7\frac{3}{7}$
- $e, \frac{1}{5}$
- f. 8

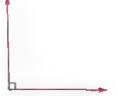
a.



b.



C.



Cumulative Assessment

- 1. a. B
- b. D
- c. C

21

- d. D
- e. B
- f. C

- g. D
- h. D

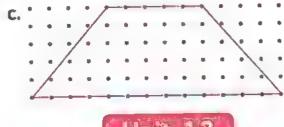
- 2. a. 4
- b. 4
- c. 34.17

- **d.** 10
- e. 71
- $f. \frac{4}{7}$

- 3. a. $1\frac{2}{8}$
- **b**. 6
- c. $1\frac{1}{3}$
- **d.** $10\frac{2}{3}$

- 4.
- a. '





Unit 13

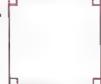
- 1. a. D
- b. C
- **c**. B

- d. C
- e. B
- f. C

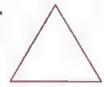
- g. D
- h. B
- i. B
- 2. a. an acute b. 90,180
 - c. 60
- **d.** $\frac{22}{3}$
- **e.** 200.14
- f. $3\frac{1}{2}$
- **g**. $\frac{2}{5}$

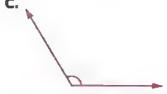
- 3. a. A right angle.
 - b. A straight angle.
 - c. an obtuse angle.
 - d. an acute angle.
- 4. a. $9\frac{3}{5}$ b. $3\frac{2}{7}$ c. 1 d. $3\frac{1}{10}$





b.





Cumulative Assessment

- a. A
- b. C
- c. B

- d. B
- e. C
- f. A

- 2. a. 8
- **b.** $2\frac{2}{9}$
- c. 103

- d. 3.05
- e. 3
- f. 3.33

- **g**. $\frac{27}{100}$
- h. $\frac{17}{5}$
- 3. $\mathbf{a}.\frac{1}{12}$, 30°
 - **b.** $\frac{1}{3}$, 120°
 - c. $\frac{1}{2}$, 180°
- 4. a. $3\frac{4}{5}$ b. $4\frac{2}{11}$

 - c. $1\frac{1}{4}$ d. $10\frac{3}{7}$

5. a.

Sport Pupils	Volleyball	Handball	Swimming	Football
Boys	6	10	12	10
Girls	4	10	8	6

- **b.** 12 boys
- c. 4 girls

Cumulative Assessment

- a. angle BCD [Answer may vary] 1.
 - b. angle BDC
- c. angle BAD
- a. angle KLM 2.
- b. angle XYZ
- angle MLK
- angle ZYX
- angle L
- angle Y

- 3. a. 7
- **b**. $\frac{2}{5}$
- **c.** 35
- **d.** $4\frac{3}{5}$
- e. 45
- g. 7
- h. Hundredths
- i. ray
- j. perpendicular
- k. obtuse
- L. 3
- 4. a. B
- b. D c. C
- d. C

- e. D
- f. C g. C

- a. B
- **b.** C **c**. C
- d. B
- e. C f. B
- g. C

- 2. a. Hundredths
 - **b.** Thirteen and thirteen hundredths.
 - **c.** $\frac{4}{10}$
- d. acute
- e. 2

- f. equilateral
- g. 25
- h. 4

3.

a.



b.



C.



- a. a scalene triangle
 a right triangle.
- **b.** an isosceles triangle an acute triangle.
- c. an equilateral triangle an acute triangle.

Monthly Tests

March Tests

Test

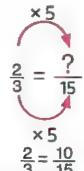
- **1. 1.** D
- 2. D
- 3. C

- 2. 1. (a) 9/10
- (b) $1\frac{1}{3}$
- **2.** 15
- 3, $\frac{3}{10}$, $\frac{3}{9}$, $\frac{3}{7}$, $\frac{3}{5}$, $\frac{3}{4}$
- 4. $\frac{18}{10}$
- **5.** $4.6 \cdot 4.6 = 460$ Hundredths.
- 6. Soha and Nora have $= \frac{3}{10} + \frac{4}{10} = \frac{7}{10} \text{ of the pizza}$ The remainder = $1 \frac{7}{10} = \frac{3}{10} = 0.3$ of the pizza
- 7. The order is: 3.04, 3.4, 4.03, 4.3

Test 2

- 1. 1. B
- 2. D
- 3. A

- 2. 1. $5\frac{4}{7}$
 - $2.\frac{1}{5},\frac{3}{6},\frac{9}{11}$
 - 3.



The number of red apples is 10

4. The total =
$$\frac{6}{10} + \frac{13}{100} = \frac{60}{100} + \frac{13}{100}$$

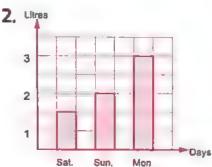
= $\frac{73}{100}$ meter.

- 5. What he bought = $1\frac{1}{2} + 3\frac{1}{2}$ = 5 kg
- **6.** 5.107
- 7. The left = $2\frac{3}{5} 1\frac{2}{5} = 1\frac{1}{5}$ cakes

April Tests

Test 1

- **1.** 1. B
- 2. D
- 3. C
- 2. 1. Y



- 3. [a] AB and CD
 - (b) AB and BD [Answer may vary]
- 4. (a) parallel
 - (b) perpendicular
- 5. Boys 4 ,3 Girls — 6 ,3
- **6**. (a) 10
- (b) Vanilla

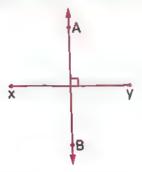
7.

67



- 1. B
- **2**. C
- 3. B

2. 1.



2. Hala is using a square.



3. [a] Ahmed

(b) 15 + 12 + 14 = 41 pages

- 4. (a) Straight line (b) Ray
- 5. Green < Blue < Yellow < Red

6.

sport Pupils	Volley ball	Hand ball	Swimming	Foot ball
Girls	6	10	12	10
Boys	4	10	8	6

)			X					
	х		X	Х			X	
	X	X	X	×	X	X	X	
	1			13/4				

Answers of

General Revision

Unit 9

1.

- 1. 5
- 2. 11
- 3. ⁶/₁₀
- 4.8

- 5. 4
- 6.3
- 8.5

- 9. $\frac{5}{7}$ 10. 2 11. $7\frac{7}{9}$ 12. $2\frac{1}{7}$

- 13. $\frac{3}{5}$ 14. $\frac{3}{7}$ 15. $\frac{21}{4}$ 16. $5\frac{2}{3}$
- 17. $5\frac{4}{6}$ 18. $\frac{5}{7}$

2.

- 1. B
- 2. B
- 3. D
- 4. B

- 5. C
- 6. C
- **7**. B
- 8. C

- 9. D
- 10. D
- 11. D
- 12. C

- 13. B
- 14. B
- 15. A
- 16. B

- 17. C
- 18. C
- 19. B
- **20**. D

- 21. A
- **22.** D
- 23. C
- **24**. D

- **25**. B
- **26**. B
- **27**. B

3.

- 1. The left = $2\frac{4}{5} 1\frac{1}{5} = 1\frac{3}{5}$ cakes.
- 2. The total = $1\frac{3}{8} + 1\frac{5}{8} = 3$ liters.
- 3. He bought = $1\frac{1}{2} + 2\frac{1}{2} = 4 \text{ kg}$.
- 4. The left = $6\frac{4}{5} 3\frac{1}{5} = 3\frac{3}{5}$ cakes.
- 5. There are $7 \times 3 = 21$ sevenths.
- 6. The red apples = $18 \times \frac{2}{3} = 12$ apples
- 7. The order is: $\frac{3}{10}$, $\frac{3}{9}$, $\frac{3}{7}$, $\frac{3}{5}$, $\frac{3}{4}$
- **8.** The order is: $\frac{1}{4}$, $\frac{5}{10}$, $\frac{8}{9}$

Unit 10

1.

- 1. Hundredths
- 2. Tenths

3. 0.05

4. 0.3

5. 0.6

6. 3.03

7. $\frac{7}{100}$

8. 60.8

9. 8,56

10, 2.19

11. 2.13

- **12**. 3
- 13. 60 + 0.5 + 0.07
- 14. 6 + 0.1 + 0.07
- **15.** 3.33
- 16. Twelve and eight hundredths
- 17. 24

- 18. $\frac{50}{100}$ or $\frac{5}{10}$
- **19**. 6 35
- **20**. $\frac{45}{100}$
- **21.** $\frac{13}{100}$

2.

- 1. D
- 2. C
- 3. C
- 4. C

- 5. A
- 6. A

10. C

- **7.** B
- 8. A 11. A
 - 12. C

13. C

9. A

- 14. D
- 15. B
- **16**. B

- 17. A
- 18. C
- 19. B
- **20**. A

- 21. A
- 22. A
- 23. A
- 24. B

- **25**. C
- 26. D
- **27**. D
- 28. D.

- **29**. B
- 30. C
- 31. B

3.

1. 4.709

- 2. 3.7 > 370 Hundredths
- Soha and Nora have 0.3 + 0.5 $=\frac{3}{10}+\frac{5}{10}=\frac{8}{10}=0.8$ of the pizza The remainder = $1 - \frac{8}{10} = \frac{2}{10} = 0.2$ of the pizza.
- 4. Renad had = $\frac{7}{10} + \frac{35}{100}$ $=\frac{70}{100}+\frac{35}{100}$ $=\frac{105}{100}$ = 1.05 meters.
- 5. The total = $\frac{7}{10} + \frac{13}{100} = \frac{70}{100} + \frac{13}{100}$ $=\frac{83}{100}$ meter.
- **6.** Mina walked = $\frac{5}{10} + \frac{32}{100}$ $=\frac{50}{100}+\frac{32}{100}=\frac{82}{100}$ km. $= 0.82 \, \text{km}$

Unit 11

1.

- 1. double bar graph 2. 4

4. a. 8

- b. 6
- b. Volleyball 5. a. Handball — → 10 Swimming → 8 Football-
- 6. a. Volleyball Handball Swimming Football 10 8 6 6 10 12
 - b. 8

- c. 6
- 7. a. Yellow
- b.12 + 11 = 23

- 2.
- 2. D 1. B
- 3. B
- 4. D

- 5. D
- 6. D
- 7. C
- 8. B

- 9. A
- 10. a. A
- b.D
- c.C

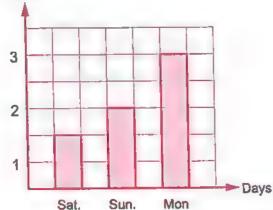
- 11. A
- 12. B
- 13. C
- 14. C

- **15.** B
- 16. a.C
- b.A

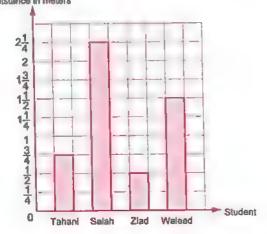
3.

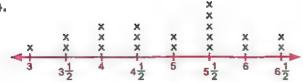
- 1. a. Ahmed
- b. Aly
- c.15+12+14=41 d.15-12=3





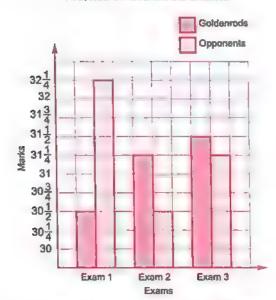
3. Distance in meters





5. The suitable type of graph is a double bar graph, because it compares two related sets of data.

Markes of the three exams



- a. Goldenrods
- b. Goldenrods

c.
$$31\frac{1}{4} - 30\frac{1}{2} = \frac{3}{4}$$
 mark

d.
$$31\frac{1}{2} + 31\frac{1}{4} = 62\frac{3}{4}$$
 marks

Unit 12

1.

1. XY

- 2. a ray
- 3. perpendicular
- 4. parallel
- 5. parallel
- 6. zero
- 7. an obtuse
- 8. an acute
- 9. a right
- 10. an acute
- **11.** an equilateral **12.** 2

- 13. equilateral
- 14.8
- 15. acute
- 16.

17. 4

18. 4

19. 4

20. The trapezium

2.

- 1. A
- 2. D
- 3. C
- 4. B

- 5. D
- 6. D
- 7. A
- 8. C

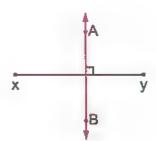
- 9. C
- 10. A
- 11. C
- 12. A

- 13. B
- 14. C
- 15. B
- 16. B 20. A

- 17. C 21. D
- 18. B
- 19. B **23**. B
- 24. B

- 25. D
- **22.** B 26. A
- **27**. D 28. A

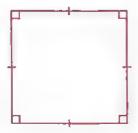
- 29. D
- 3.
- 1.



2.



3. Hala is using a square.





- 4. a. AB and CD or AC and BD.
 - b. AB and BD or BD and DC or DC and CA or CA and AB.

Unit 13

- 1.
- 1. 90°

- 2. 180
- 3. an obtuse
- 4. 90
- **5**. 90
- 6. acute
- 7. scalene
- 8. an obtuse
- 9, the protractor
- 10. AB , AC
- 11. 90° ,180°
- 12. ∠UTS , ∠STU , ∠T
- **13**. zero
- 14. a straight

- 2.
- 1. A
- 2. A
- 3. A
- 4. A

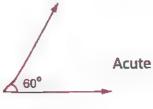
- **5**. B
- **6.** A
- **7.** D
- 8. D

- 9. C
- **10**. B
- 11. B
- **12.** D

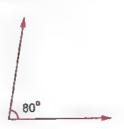
- **13**. B
- 14. C
- 15. C
- 16. C

- 17. C
- 18. C
- 19. C
- **20**. C

- 21. C
- **22**. B
- 3.
- 1.

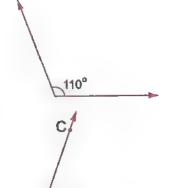


2.

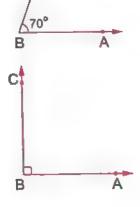


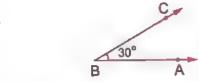
3.

4.



5.





- 7. a. ∠ CBD
- **b.**∠ABD
- 8. a. scalen triangle, right triangle.
 - b. Isosceles triangle, acute triangle.
- 9. a. 40°, acute angle.
 - b. 110° , obtuse angle.
 - c. 90°, right angle.

Answers of

Final Exams

Exam

- 1.
- 1. C
- 2. A

- 4. C
- 5. B
- 6. C

3. C

- 7. C 8. D
- 9. C

2.

1. The total amount = $\frac{5}{10} + \frac{35}{100}$

$$=\frac{85}{100}$$
 pound.

- 2. a. DC
- b. CD
- 3. $3\frac{3}{4}$
- 4.2 + 0.4
- 5. $0.6 = \frac{6}{10}$ $\frac{6}{10} > \frac{4}{10}$

so , Ahmed drinks more than Heba.

- 6. $5\frac{7}{9}$
- 7. 30°

Exam

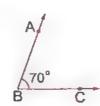
- 1.
- 1. D
- 2. D
- 3. A

- 4. B
- 5. C
- 6. C

- 7. D
- 8. D
- 9. D

2.

- 1. The number of chocolate cakes $=\frac{1}{5} \times 20 = 4$ cakes.
- 2. The order is: 0.9, 0.5, 0.08, 0.03
- 3. Type: acute angle.



4.

Pupils	Primary 1	Primary 2	Primary 3	Primary 4
Boys	20	30	25	15
Girls	25	30	15	35

- 5. a.1
- **b.** $9\frac{3}{5}$
- 6. 21
- 7. 1. AB and CD
 - 2. AD and CD or AD and AB

Exam

- 1.
- 1. A
- 2. B
- 3. D

- 4. B
- 5. C

6. A

- 7. B
- 8. B
- 9. D

- 2.
- $1.2\frac{3}{8}$
- 2.70°
- 3. She have = $\frac{5}{10} + \frac{45}{100} = \frac{50}{100} + \frac{45}{100}$ $=\frac{95}{100}$ liters

Month	December	January	February	March
No. of days	2	6	14	4

- **5.** The order is: $\frac{1}{9}$, $\frac{4}{9}$, $\frac{5}{9}$, $\frac{7}{9}$, 1
- 6. 3.52 , 3.3 , 3.9
- 7. a. an equilateral triangle.
 - **b**. 15



- **2.** D
- 3. C

- 5. C
- 6. A

- 8. B
- 9. C

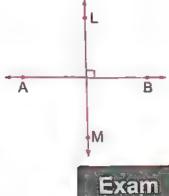
- 1. The order is: $\frac{1}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{7}{8}$
- 2. The total distance = $\frac{7}{10} + \frac{21}{100}$ = $\frac{70}{100} + \frac{21}{100}$ = $\frac{91}{100}$ km
- 3.a.ABC
- b. acute angle
- c.B
- d. 50°

4.

	Sport Pupils	Volleyball	Handball	Swimming	Football
ſ	Girls	6	10	12	10
ľ	Boys	4	10	8	6

- 5. a. $1\frac{4}{6}$
- **b**. $\frac{6}{25}$
- 6. What he ate = $9 \times \frac{2}{3} = 6$ cookies

7.



1.

- 1. A
- **2**. D
- 3. C

- 4. A
- **5**. C
- 6. A

- **7.** B
- 8. A
- **9**. D

2.

- 1.5 persons
- 2. $5\frac{3}{9}$
- 3.a. DC
- b. DC

- 4. The order is: $\frac{1}{10}$, $\frac{2}{10}$, $\frac{4}{10}$, $\frac{5}{10}$
- 5. They drank together

$$=\frac{4}{10} + \frac{30}{100} = \frac{40}{100} + \frac{30}{100} = \frac{70}{100}$$
 liter.

- 6. What she gave = $9 \times \frac{1}{3} = 3$ pounds
- 7. a. ∠ABC or ∠CBA or ∠B
 - b. An acute angle

Exam 6

1.

- 1. D
- 2. A
- **3.** B

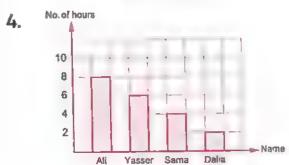
- 4. A
- **5**. D
- **6**. C

- 7. C
- 8. C
- 9. C

2.

- 1. The total = $1\frac{3}{8} + 2\frac{5}{8} = 4$ liters.
- 2. The remainder = $4\frac{1}{4} 2\frac{3}{4}$ = $3\frac{5}{4} - 2\frac{3}{4} = 1\frac{2}{4}$ bars





- 5. a. $1\frac{4}{5}$
- **b.** $\frac{65}{100}$
- **6.** The order is: $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{10}$
- 7. a. Parallel.
 - b. perpendicular.

Exam 7

1.

- 1. B
- 2. C
- **5**. D
- 7. B

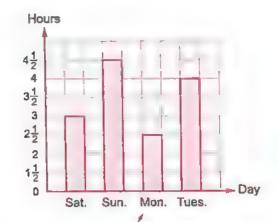
4, D

- **8**. D
- **3**. B
- 6. C
- 9. C

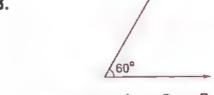
2.

- 1. a. $2\frac{5}{8}$
- **b.** 5

2.



3.

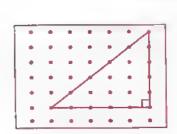


- 4. The order is $\frac{1}{10}$, $\frac{2}{10}$, $\frac{5}{10}$, $\frac{7}{10}$, $\frac{10}{10}$
- 5. $0.44 = \frac{44}{100}$ and $\frac{6}{10} = \frac{60}{100}$ $\frac{60}{100} > \frac{44}{100}$

So, Hany walks a longer distance to the school.

6. The number of birds = $\frac{3}{4} \times 12$ = 9 birds.

7.



Exam 6

1.

- 1. D 4. C
- **2**. B
- 5. C

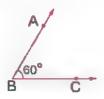
- **7**. C
- 8. C

B
 B

3. B

2.

1.



- 2.10.55 = 10 + 0.5 + 0.05
- 3. The order is: 0.9, 0.85, 0.3, 0.09

4

रिक्षिरि-इक्षिप						
Sport Football Basketball Handball Tenni						
Boys	9	5	4	6		
Girls	3	2	13	6		

- 5. a. $7\frac{1}{8}$
 - **b**. $1\frac{5}{6}$
- **6.** The left = $5\frac{2}{3} 3\frac{1}{3} = 2\frac{1}{3}$ cakes.
- 7. a. straight line.
 - b. ray

Exam

1.

- 1. C
- 2. A
- 3. A

4. B

7. C

- **5.** C **8.** D
- 6. B9. A

2.

1. What he donated = $18 \times \frac{2}{3}$ = 12 pounds

2. a.
$$2\frac{6}{9}$$

b. $\frac{2}{5}$

b. right angle.

b. 10 boys.

5. The order is:
$$\frac{3}{10}$$
, $\frac{3}{8}$, $\frac{3}{7}$, $\frac{3}{5}$, $\frac{3}{3}$

6.



7. 1.7 > 1.5 So , Wesam bought more than Amira.



1.

1. B

2. A

3. B

4. A

5. C

6. D

7. D

8. D

9. C

2.

1. She ate =
$$\frac{1}{3} \times 27 = 9$$
 pieces.

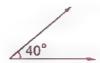
2. a. 6

b. 2

3. The total length =
$$\frac{33}{100} + \frac{42}{100}$$

= $\frac{75}{100}$ meter.

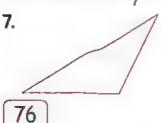
4. The type : acute angle.



5. a. 4

b. $\frac{1}{4}$

6. The left =
$$4\frac{3}{7} - 2\frac{1}{7} = 2\frac{2}{7}$$
 cakes.



Exam III

1.

1. A

2. C

3. D

4. C

5. C

6, C

7. B

8. D

9. B

2.

1. The total distance

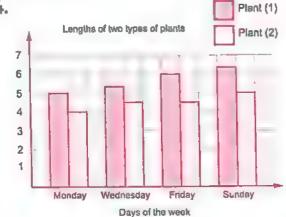
$$=\frac{4}{10}+\frac{51}{100}=\frac{40}{100}+\frac{51}{100}=\frac{91}{100}$$
 km.

2.



3. The order is: 3.04, 3.4, 4.03, 4.3

4.



5. a. \overline{AW} and \overline{ZF}

b. AW and WF

6. a. $2\frac{4}{8}$

b. $4\frac{3}{5}$

7. The left = $3\frac{2}{3} - 2\frac{1}{3} = 1\frac{1}{3}$ cookies.



1.

1. B

2. D

3. B

4. D

5. C

6. C

7. B

8. A

9. B

- 1. The order: $\frac{1}{9}$, $\frac{4}{9}$, $\frac{5}{9}$, $\frac{7}{9}$
- 2. They drank = $\frac{4}{10} + \frac{30}{100} = \frac{40}{100} + \frac{30}{100}$ = $\frac{70}{100}$ liter.
- 3. a. ∠ ABC

b. Right angle.

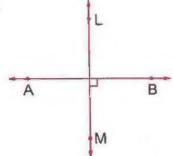
4.

Month	December	January	February	March
No. of days	2	6	14	3

5.62

6. $3\frac{2}{9}$

7.



Exam 13

1.

- 1. C
- 2. C
- 3. C

- 4. B
- 5. B
- 6. B

- 7. A
- 8. C
- 9. A

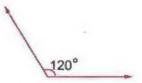
2.

- 1. $5\frac{4}{7}$
- 2. The number of hours = $1\frac{3}{4} + 1\frac{1}{4}$ = 3 hours.
- 3. 30 students
- 4. a. The rectangle ABCD.
 - b. BC
- 5. The order is: $\frac{6}{7}, \frac{5}{7}, \frac{4}{7}, \frac{1}{7}$

6. Hossam walked

$$=\frac{35}{100}+\frac{4}{10}=\frac{35}{100}+\frac{40}{100}=\frac{75}{100}$$
 km.

7.



Exam 14

1.

- 1. B
- 2. D
- 3. B

- 4. C
- 5. C
- 6. C

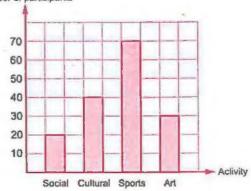
- 7. C
- 8. C
- 9. B

2.

- 1. $1\frac{1}{5}$
- 2.3 + 0.8 + 0.09
- 3. They drank = $1\frac{2}{7} + 1\frac{5}{7} = 3$ liter.

4. x

- 5, 1.8, 3.8, 4.35
- 6. Number of participants



- 7. a. An acute triangle.
 - b.18

Exam 15

1.

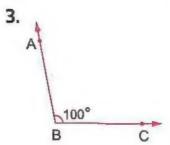
- 1. C
- 2. C
- 3. A

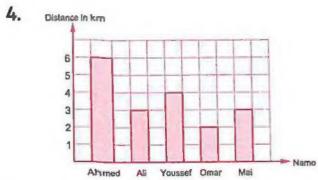
- 4. B
- 5. C
- 6. C

- 7. B
- 8. A
- **9**. D

2.

- 1. The order is: $\frac{5}{11}$, $\frac{5}{10}$, $\frac{5}{7}$, $\frac{5}{6}$, $\frac{5}{5}$
- 2. Ahmed walked = $\frac{3}{10} + \frac{25}{100}$ = $\frac{30}{100} + \frac{25}{100}$ = $\frac{55}{100}$ kilometers.





- 5. The remaining part = $1 \frac{2}{5}$ = $\frac{3}{5}$ of a pizza.
- 6. The total = $\frac{2}{10} + \frac{5}{10} = \frac{7}{10}$ km.
- 7. a. CD
- b. AD
- c.E

Exam 16

1.

- 1. D
- 2. B
- 3. C

- 4. C
- 5. D
- 6. B

- 7. A
- 8. A
- 9. A

2.

- 1. The order is: $\frac{1}{8}$, $\frac{2}{8}$, $\frac{5}{8}$, $\frac{9}{8}$
- 2. The left = $3\frac{3}{4} 1\frac{2}{4} = 2\frac{1}{4}$ kg
- 3.

4.

Pupils	Primary 1	Primary 2	Primary 3	Primary 4
Boys	4	6	5	3
Girls	5	6	3	7

- 5. a. $\frac{82}{100}$
- **b.** $3\frac{2}{9}$
- **6.** The total distance = $1\frac{1}{10} + \frac{9}{10} = 2$ km.
- 7. a. AB and AD
 - b. AB and CD

(Answer may vary)

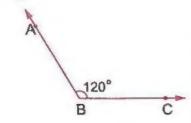
Exam 17

- 1. B
- 2. B
- 3. C

- 4. B
- **5**. D
- 6. D

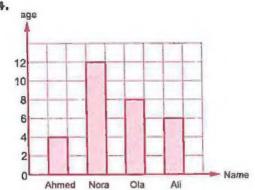
- 7. 0
- 8. C
- 9. D

1. Type: obtuse angle.



- 2. What he read = $\frac{5}{10} + \frac{35}{100} = \frac{50}{100} + \frac{35}{100}$ $=\frac{85}{100}$ of the book
- 3. 14

4.



- 5. The order is: 0.9, 0.5, 0.08, 0.03
- **6.** The remainder is $\frac{5}{6}$ of his homework.
- 7. a. Scalene triangle.
 - b. Right triangle.

Exam

1.

- 1. A
- 2. A
- 5. B
- 4. C

- 3. B
- 6. A

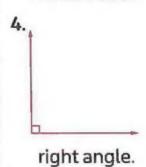
7. C

- 8. D
- 9. C

2.

1. The total weight = $2\frac{5}{10} + 1\frac{3}{10}$ $=3\frac{8}{10}$ km.

- 2. The order: $\frac{5}{10}$, $\frac{5}{9}$, $\frac{5}{8}$, $\frac{5}{6}$, $\frac{5}{5}$
- 3. sixty-three and seventy two hundredths.



5. 4

- 6. a. $\frac{55}{100}$
- b. $4\frac{2}{5}$
- 7. a. parallel.
- b. perpendicular.
- c. intersecting.

Exam

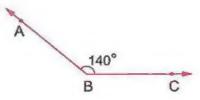
1.

- 1. C
- 2. C
- 3. D

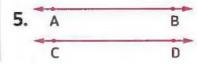
- 4. A
- 5. D
- 6. A

- 7. B
- 8. A
- 9. C

- 1. They drank = $2\frac{4}{9} + 1\frac{3}{9} = 3\frac{7}{9}$ liters.
- 2. The number of pens = $\frac{2}{3} \times 9 = 6$ pens.



- 4. a. Football.
- b. 32 students.



- **6.** The order is: $\frac{1}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{7}{8}$
- 7. a. $\frac{42}{100}$
- **b.** $2\frac{3}{4}$

Exam 20

1.

- 1. A
- 2. C
- **3**. D

- 4. B
- 5. A
- **6**. B

- 7. A
- 8. C
- 9. C

2.

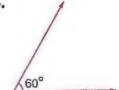
- 1. The order = $\frac{1}{9}$, $\frac{2}{9}$, $\frac{5}{9}$, $\frac{8}{9}$
- 2. Hossam walked

$$=\frac{7}{10}+\frac{21}{100}=\frac{70}{100}+\frac{21}{100}=\frac{91}{100}$$
km.

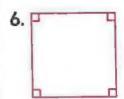
3.

Month	December	January	February	March
No. of days	2	6	10	4

4.



5. The remainder = $5\frac{1}{4} - 3\frac{3}{4}$ = $4\frac{5}{4} - 3\frac{3}{4}$ = $1\frac{2}{4}$ pounds.



- 7. a. $3\frac{8}{4} = 5$
- **b.** $2\frac{1}{6}$